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ORIGINAL LECTURES.

THE MIDDLETON GOLDSMITH LECTURES.

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LECTURE II.

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MULTIPLE NEURITIS, AND ITS RELATION TO CERTAIN PERIPHERAL NEUROSES.

(Continued from page 174.)

2. *Multiple neuritis consequent upon infectious diseases*—There are a number of infectious diseases which are especially liable to be followed by the development of nervous symptoms. These are diphtheria, variola, typhoid, typhus, and scarlet fever, malarial fever, and tuberculosis. The nervous affection usually appears shortly after the period of convalescence in the acute fever. The disease may consist of a simple paralysis of the muscles in the region of distribution of a single nerve. It may affect several nerves on both sides of the body symmetrically. It may even paralyze two or more limbs. It occasionally produces sensory as well as motor symptoms in a single nerve-trunk. It may even cause a general sensory and motor paralysis of as widespread and complex a kind as that produced by chronic alcoholism. Sometimes the symptoms are chiefly of a sensory kind, and consist exclusively of pains, numbness and anæsthesia, or hyperæsthesia, in the legs, or of a loss of the muscular sense, in which case a true ataxia is the most noticeable symptom. Thus it is evident that the poison of an infectious disease may act as powerfully upon the nervous system as any other form of poison known.

It is only since the clinical pictures presented by multiple neuritis have been recognized that a question has arisen as to the part of the nervous system affected in these cases. Formerly all such phenomena were referred to central lesions; and undoubtedly in many cases this was justified, since autopsies are not wanting to prove that anterior poliomyelitis, diffuse myelitis, and hemorrhages into the cord and brain may follow the acute fevers. There are, however, many conditions which do not correspond to the types of disease produced by central lesions, and which recover with a rapidity impossible were the brain or spinal cord involved. It was these cases which raised the question of some possible affection of the peripheral nerves. And careful investigation has been rewarded by the actual discovery of lesions in them.[1]

(*a*) Diphtheritic paralysis is probably more common than any other of these forms of neuritis. As is well known, it is usually the soft palate to which the paralysis is limited, and, as a result, difficulty in swallowing, and in speech are the most prominent symptoms. Bernhardt has found[1] that in the large majority of cases of this kind there is a loss of the patella tendon reflex, but whether this indicates any general affection of the peripheral nerves he does not venture to state. The limitation of the paralysis to the palate has been explained by supposing that the poison of the disease has a direct action upon the terminal filaments of the nerves, which in this position are, as it were, dipped constantly in the poison. This theory is supported by a case in which paralysis of the abdominal muscles was associated with diphtheritic inflammation of the navel in a newborn child. But the more serious cases prove that through the blood the poison may be carried to nerves far removed from the seat of the diphtheritic inflammation.

And the following cases demonstrate the widespread symptoms which such general poisoning can produce, as well as the nature of the lesion.

Observation XIV.—Marie S., aged thirteen, after suffering for a few days from a slight sore throat, found herself unable to see clearly because of the development of a paresis of accommodation. There followed a slowly progressing ataxia of the upper, and later of the lower, limbs, with uncertain gait, disturbance of touch, pain, temperature, and muscular senses, with delayed sensation of pain, and loss of tendon reflexes. At first she felt shooting pains in the limbs, but later these ceased. There was at no time tenderness of the nerves to pressure. After three months bulbar symptoms appeared, atrophy with paresis of the tongue, difficulty in swallowing, spasms of coughing, weakness of voice, and paralysis of the palate. The muscles of the hands began to atrophy about the time that the bulbar symptoms commenced, and soon were useless. In the atrophic muscles the faradic reaction was absent, the galvanic much reduced and very slow. Nine months after the onset she died of pneumonia.

The autopsy showed the brain and spinal cord to be normal. In all the peripheral nerves of the extremities, as well as in the hypoglossal and recurrent laryngeal nerves, well-marked atrophic degeneration was found, with destruction of axis-cylinders and medullary sheaths, and with thickening and increase of nuclei in the connective tissue sheaths.[2]

Observation XV.—Male, aged seventeen, after an attack of diphtheria grew gradually weaker and weaker, developed paralysis of the uvula, and paralysis with some atrophy in the muscles of all the limbs, and a slight paralysis of the face and tongue. There was no real ataxia, the muscular sense being normal, but the

[1] Pitres et Vaillard: Rev. de Médecine, 1885, p. 986; 1886, p, 193 et p. 574, Des Névrites Perpihériques chez les typhoides, les tuberculeux et les tabétiques. Also, Arch. de Neurol., 1886, p. 337, De la névrite segmentaire.

[1] Virch. Archiv., 1885, Bd. 99, S. 393.

[2] Kast.: Deut. Arch. f. klin. Med., 1886, Bd. xl. S. 41.

weakness of the muscles interfered with all accurate movement and caused trembling. The eyes were not affected. There was a slight decrease of tactile sense all over, but pain sense was slow and imperfect. The reflexes were lost, electric reaction was normal in all muscles except the palate, in which RD was found. The sphincters were unaffected. The paralysis involved the respiratory muscles three weeks after the onset of the disease, and caused his death.

The autopsy showed extensive parenchymatous neuritis in all the peripheral nerves. The various stages of degeneration were found side by side in many nerves, and all degrees of degeneration were discovered. The nerves of the extremities, as well as the phrenics, showed these changes. Some nerve-fibres had simply lost their myelin sheath, others were reduced to a series of granular corpuscles; others consisted only of the empty Schwann sheath, whose nuclei were numerous. In many nerves the lesion involved only a few segments, and was not continuous through the entire length. At places circumscribed thickening of the endoneurium produced nodular appearances in the course of the degenerated nerve. Here congestion and emigration of leucocytes were found. The perineurium was unaffected. In almost all the muscles of the extremities and trunk such degenerated nerve-fibres were found. The cutaneous nerves were similarly affected, but to a less degree. The nerve-trunks were but slightly affected, as were also the nerve-roots. The spinal ganglia and cord were normal.[1] The limitation of the degeneration to single segments has also been noticed by Gombault and by Pitres et Vaillard.[2]

Observation XVI.—A boy, aged eight, developed paralysis of the soft palate one week after an attack of diphtheria. This continued for one month, when there suddenly appeared a weakness of all the extremities, and some disturbance of sight. Examination of the eyes showed a complete paralysis of all the recti muscles, with double ptosis, the accommodation and pupil reactions being preserved. The right side of the face was paretic. There was a very marked ataxia in all the limbs. It was with difficulty that he could carry food to his mouth, and he walked with much staggering, and with legs wide apart. Power and nutrition of the muscles were normal, and there was no change in their electric contractility. The tendon reflexes were absent, but the skin reflexes were preserved; and there was no disturbance of sensation, or of bladder and rectal functions. The symptoms all increased for ten days, and then respiratory paralysis caused his death.

It was possible to examine the brain only. The small vessels and capillaries were engorged, and the perivascular spaces full of emigrated corpuscles, while here and there small capillary hemorrhages were found. The vessel walls were not affected, and there were no thrombi discovered. The nuclei of the cranial nerves showed no changes. Both oculo-motor nerves were the seat of very great changes. The myelin sheath of individual nerve-fibres absorbed the carmine stain. In many fibres no axis-cylinder was to be seen. In others the cylinders were swollen or atrophied, presenting variations in size. The number of nuclei of the endoneurium was greatly increased, and among them large granular corpuscles were discovered. The lesion, therefore, which had caused the ocular paralysis was a diffuse neuritis.[1]

A similar affection of the ocular muscles, associated with general weakness, has been reported by Utthoff,[2] which developed two weeks after an attack of diphtheria, in a boy, ten years of age, and at the end of three months had completely recovered. In this case all reaction of the pupils in accommodation was lost, but the light reflex remained. The eye symptoms were attended by some paresis, especially in the legs below the knees, but the muscles were not atrophied, nor was their electric contractility altered. There was a very marked tenderness along the course of all the nerve-trunks. After recovery was complete the knee-jerk returned.

I have seen a case which resembled this quite closely, and inasmuch as paralysis of all the ocular muscles appears to be a rather rare affection, the case may be worthy of mention here.

Observation XVII.—A boy, aged thirteen, after an attack of diphtheria developed paralysis of the soft palate. One week after the parlysis of the palate he noticed a disturbance of vision, which proved on examination to be due to a total paralysis of all the muscles of the eyeballs. The pupil reflex to light was preserved; but as he could not converge the eyes there was no reaction in accommodation. This paralysis of the eyeballs came on within twenty-four hours, and at the same time he developed a very marked degree of ataxia. He swayed in standing with eyes closed, and his gait was exactly like that of a well-marked case of tabes. The motions of the hands were also disturbed, and all the tests demonstrated an extreme degree of incoördination. The knee-jerks were lost; the skin reflexes were present. In addition to the ataxia there was actual weakness of the muscles, which was more evident in the arms and hands than in the lower extremities. He had formication in the legs, but not in the hands, and there were no lightning pains. He had great difficulty in swallowing solids as well as liquids, which seemed to point to some involvement of the muscles of deglutition as well as of the soft palate. This condition remained stationary for about three weeks, and then all the symptoms began to pass off gradually. His recovery was not complete until six months after the onset.

The prognosis in cases of diphtheritic paralysis is usually very good, the fatal cases here cited being rarities. The treatment consists in general tonic medicines, and the application of electricity to the limbs in the same manner as in other cases of neuritis.

(*b*) Neuritis following variola is a rare complication, and the following case is the only one on record in which an autopsy proved the seat of the lesion:

Observation XVIII.—A young man had varioloid in November, 1881, and while convalescing, six weeks later, began to suffer from severe pains in his four extremities, especially in the joints of his arms, which were diagnosticated as rheumatic, although there was no fever. Soon after there followed a true paresis, with progressive atrophy of the muscles of forearms and legs. The muscles at the same time became very tender to

[1] P. Mayer: Virch. Arch., 1881, Bd. 85, S. 181–226.
[2] Arch. de Neurol., xi.

[1] Mendel: Neurol. Centralbl., 1885, p. 128.
[2] Neurol. Centralbl., 1885, p. 125.

touch or pressure. The tendon reflexes were much diminished. Reaction of degeneration developed in all the paretic muscles. The pains in the joints and limbs continued, but were less severe than at the outset. The sensibility of the skin was about normal. The nerve-trunks were tender to pressure. Profuse, offensive perspiration in all four extremities was a distressing symptom. There was no tendency to bedsores, but an extensive pemphigus developed in the legs, and then the pains became more severe. The patient died in July, 1882, of pneumonia.

Autopsy showed the brain œdematous, and the cord in a state of hypostatic congestion. The pathological changes of importance were found in the nerves and muscles. The majority of the nerves of all the extremities were found in a state of degeneration and atrophy. There was marked degenerative atrophy and fatty degeneration of the muscles.[1]

(*c*) It is still somewhat a matter of conjecture whether cases of paralysis following typhoid, typhus, and malarial fevers are due to an affection of the peripheral nerves or of the spinal cord. The researches of Pitres and Vaillard[2] have shown that extensive degeneration of peripheral nerves is to be found in the bodies of patients who have died of typhoid fever, and they have also demonstrated that these fevers are often followed by local neuritis as a sequel. Cases of multiple neuritis with autopsies have not as yet been reported after typhoid or typhus: but Buzzard has recently recorded[3] two cases, following malarial fever, in which all the symptoms pointed to an affection of the peripheral nerves. In this country Gibney has described several cases of paralysis of the extremities, of sudden onset, rapid course, and prompt recovery under large doses of quinine, which he considered malarial. Probably the following case, which was kindly sent to me by Dr. L. E. Holt, was of this nature.

Observation XIX.—Peter S., aged ten, a healthy boy, was suddenly seized with a chill and fever, and with pains of a severe kind in both legs, associated with weakness so that he could hardly stand. The pain was referred to the sciatic nerves, and was accompanied by numbness and tingling of the feet and legs. There was marked tenderness both in the course of the sciatics and in the muscles of the thigh and leg. There was loss of tendon reflexes, preservation of skin reflexes, and marked paresis in all the muscles of the legs, so that he required help in walking. There was no ataxia, and no incontinence of urine. The symptoms lasted about twenty-four hours, aud then decreased in severity gradually during the following day, but recurred on the third, and, after a remission, on the fifth day, with lessened severity. The periodicity of the affection and the rapid cure under quinine left no doubt as to its malarial nature. During the third day, at the time when I saw him, there was redness along the course of the sciatics, and in the region of the right median nerve, and extreme tenderness along these nerve-trunks, in addition to the symptoms mentioned. The electric condition was, unfortunately, not tested; but in Westphal's case faradic contractility was totally abolished during the attack.[1] In this case the active manifestation of the malarial poisoning was by general neuritis. In Buzzard's cases the malarial attacks preceded the nervous affection. The tenderness in muscles and nerves left no doubt regarding the peripheral nature of the disease.

And here I may suggest that it is possible that many minor nervous affections of transient nature and of malarial origin, if more carefully examined, will be found to be due to some abnormal condition in the peripheral nerves. I allude not only to neuralgiæ, but also to visceral neuroses, whose clinical features have been so graphically described by Dr. Clifford Allbutt,[2] and to numb fingers and toes, and to hyperæsthetic and painful areas on the surface, and that host of symptoms of a local character so often carelessly ticketed neurasthenia and dismissed from consideration as soon as named. There is much in the study of the phenomena of neuritis to enforce this suggestion, which cannot be developed here.

(*d*) We come, lastly, to those cases of multiple neuritis which occur in tubercular patients, or in those who have had syphilis. If a review of the cases of multiple neuritis already cited be made, it will be found that quite a number of the patients died of phthisis. This was true of the cases of Joffroy, Eisenlohr, Strümpell, Webber, and Müller. Oppenheim[3] has reported cases of multiple neuritis in tubercular patients which went on to recovery. The following case died:

Observation XX.—A young girl, who had had syphilis and was suffering from phthisis, took a severe cold and began to have pains in the joints, weakness, and numbness of the lower extremities. The weakness of the legs increased rapidly, and was attended by rapid diffuse atrophy. The same symptoms soon developed in the arm. Four weeks after the onset partial RD was present in all the extremities, and a total paralysis of the legs, and nearly complete paralysis of the arms were present. In the course of the disease, which lasted five months, there was little pain. but great tenderness of the muscles and hyperæsthesia of the skin. The sensation was diminished in feet and hands, but this was slight in comparison with the motor symptoms. The paralysis finally attacked the trunk muscles and the diaphragm, while the beginning of rapid heart action was thought to indicate paralysis of the pneumogastric nerve. Great prostration, delirium, incontinence, bedsores, and œdema of extremities, with fever, preceded death.

Autopsy: High degree of degeneration of the peripheral nerves, including the phrenic and pneumogastric, was found, with a moderate degree of atrophy of the muscles. Cord normal, anterior motor roots normal. The changes in the nerves were similar to those after section, viz., a simple degeneration of the fibres with some increase in the connective tissue, but there were no evidences of changes in the vessel-walls, no infiltration with cells. The nerves contained very few normal fibres. The myelin sheaths were found in all stages of destruction, down to an entire absence of contents of the sheath of Schwann. Throughout the fibres fatty and granular masses were found. The sheath of

[1] P. Grocco, Milano, 1885; Centralbl. f. med. Wissen., 1885, p. 693,

[2] Rev. de Méd., 1885, p. 980, Des Névrites périphériques.

[3] Paralysis from Peripheral Neuritis, p. 104.

[1] Neurol. Centralb., 1885, p. 287.

[2] Gulstonian Lectures, 1884.

[3] Oppenheim: Zeitschr. f. klin. Med., 1886, p. 230.

Schwann did not, however, show an increase of nuclei.[1]

Such a case as this would have been ascribed, a few years ago, to a tubercular spinal meningitis, as would many of the other cases already alluded to. It is not my purpose to dispute in any way the fact that many cases of paralysis occurring in the course of phthisis are due to lesions of the central nervous system and its membranes; but I desire to emphasize the fact that a multiple neuritis may produce paralysis in tubercular individuals, and the importance of appreciating this possibility cannot be too strongly urged, since the treatment, as well as the prognosis, will differ widely according to the diagnosis made. It has been known for some time that local neuritis may complicate phthisis, and the researches of Pitres and Vaillard have recently confirmed this fact. But the complication of multiple neuritis is one not mentioned in the text-books, and yet is one which is by no means rare. It seems not unlikely that some of the nervous symptoms in consumption, formerly considered functional, may be traced to this affection.

Although syphilis has been described as a cause of neuritis, I cannot find that the lesion in the few cases examined has had the peculiar characteristics of syphilitic lesions elsewhere in the body, and therefore it seems to me doubtful whether we are justified in describing a syphilitic multiple neuritis. Further facts are needed to establish its existence.

(*e*) It only remains to consider briefly the epidemic form of multiple neuritis, and our study of the infectious cases will be complete.

In 1882 Professor Scheube, of Tokio, Japan, called the attention of European physicians to the existence of a peculiar affection prevailing among the Japanese.[2] It was called kakke; from two Chinese words—kiaku, meaning legs; and ke, meaning disease. It had been known among the Chinese for centuries, being mentioned by name in Chinese medical books written 200 years before the birth of Christ, and fully discussed by an eminent author in 640 A.D. It ceased, however, to prevail in China about two hundred years ago, and its ravages are now confined, according to Scheube, to Japan. There its importance is considerable, since it is so prevalent that in 1877 14 per cent., and in 1878 38 per cent., of the men serving in the army suffered from it. It is considered a miasmatic infectious disease by Scheube, although an eminent Japanese authority considers it due in some way to the diet of rice. That diet has something to do with its occurrence is proven by the fact, communicated to me by Dr. Wallace Taylor, that since wheat has been substituted for rice in the diet of some of the barracks and prisons in Japan, the disease has been less common. It occurs in epidemics, but is always endemic in Japan. It does not attack Europeans. It affects females rarely, only 9 per cent. of the cases being in women; and it is the youth of the land, between the ages of sixteen and twenty-five, who are attacked. Exposure to damp and cold in crowded dwellings, such as barracks, increases the liability to the affection. The majority of the cases occur during the hot months, but some are always under observation. This disease is not, however, confined to Japan. It has been observed for many years in the islands of the Pacific Ocean, in India, Ceylon, on the west coast of the Red Sea, in Borneo and New Guinea, in Brazil and Cuba, and its prevalence in the Dutch possessions in the China Sea has made it familiar to physicians from Holland who have visited these colonies. It is there known under the name of beri-beri. It is endemic in these regions, but occasionally occurs as an epidemic. An interesting account of such an epidemic, occurring in 1882–83 in Manila, the chief city of one of the Philippine Islands, has been given by Dr. Koeniger.[1] It appears that in the fall of 1882 an epidemic of cholera occurred in Manila of such severity that 20,000 persons, in a population of 400,000, were affected. As a precaution against this disease, the native population lived for several months almost exclusively upon rice, refusing to eat fruit or fish, which are their other chief articles of diet. As the epidemic was subsiding a terrible cyclone devastated the city, destroying the light wooden houses, and leaving 60,000 families homeless; and these poor people were exposed for several weeks to the inclemency of the weather, which at this time of the year is rainy. A few days after the cyclone the epidemic of beri-beri began, and as the disease had never before appeared in Manila, the unknown affection excited great alarm. This was increased by its fearful mortality, 60 per cent. of the early cases proving fatal. Europeans were exempt, with two exceptions, and the Chinese population did not suffer greatly, but among the natives the epidemic was widespread. Thus, in one suburb of Manila, of 25,000 inhabitants, 300 died in the course of eight weeks. Men and women were equally affected, and persons of all ages, except young children, were attacked. The disease terminated fatally in from ten days to five weeks after its onset; but as time went on, the proportion of recoveries increased, and by the end of March, 1883, it had almost disappeared. The months from October to March are the dry, cool season in the Philippine Islands, although the climate is tropical. Exposure to heat could hardly be considered a cause of this epidemic, but whether the exposure to cold and damp, or the diet of rice, or the transportation of some infectious agent by the cyclone was the cause, gave rise to much discussion, and could not be determined.

Sporadic cases of beri-beri, or kakke, occasionally appear in our hospitals, usually in the persons of Chinese or Malay sailors, or in the persons of travellers from tropical climates who have been exposed to the infection in the place from which they came. Three such cases have recently been reported by Dr. Seguin, of this city,[2] in patients who came from the West Indies, and a case observed in Bellevue Hospital, by Dr. J. West Roosevelt, was discussed in the Academy of Medicine recently. In 1881 a Brazilian naval vessel entered San Francisco with a large number of the crew affected by the disease. They were sent to the United States Marine Hospital, and attended by Dr. Hebersmith, who gave an interesting account of the circumstances leading to the development of the disease, in the United States Marine Hospital Report.[3] From this report the accompanying map is taken, which demonstrates the localities in which beri-beri is endemic.

[1] Vierordt: Arch. f. Psych., 1883, xiv. 3.
[2] Deut. Arch. f. klin. Med., xxxi. and xxvii.

[1] Deut. Arch. f. klin. Med., xxxiv.
[2] THE MEDICAL NEWS, Philadelphia, December 11, 1886.
[3] Marine Hospital Report, 1881.

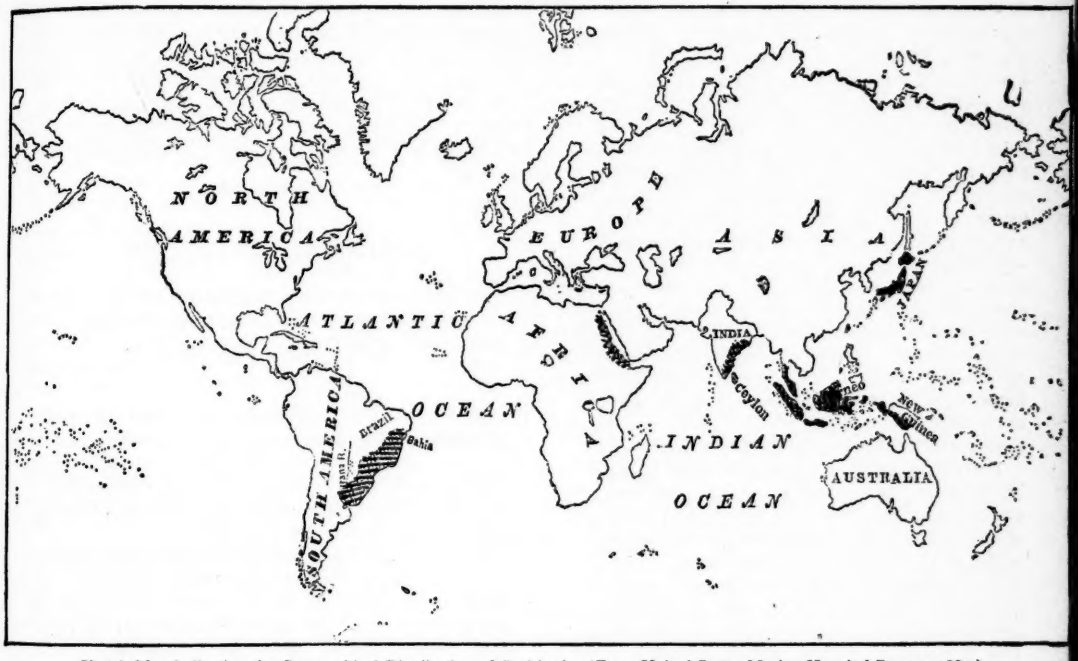
Only last year a commission was appointed by the Dutch Government to investigate the subject of its nature, and the recently published report contains the following statements:[1] The disease is caused by a micro-organism resembling the bacillus of splenic fever, though somewhat smaller, which colors with fuchsin and gentian-violet, and can be seen with a power of 560 degrees. These bacilli are found in the blood, lungs, heart, brain, cord, and nerves of the patients, and can be cultivated outside of the body. The germs infect wooden dwellings chiefly. They may be conveyed by articles of clothing, and probably enter the body by the lungs. Direct contagion has not been observed. A potent predisposing cause to their reception in the body and to the development of the disease is lack of nutrition, consequent upon exposure to damp and to cold, and upon insufficient or bad food. It must, however, be added that a most thorough examination in Dr. Roosevelt's case, by Dr. Prudden, failed to reveal the presence of such bacilli.

In the light of these recent investigations a new view is taken of an epidemic of a peculiar kind which occurred in France in 1828. Buzzard has found an account of this, prepared by Graves, in which the symptoms are so fully detailed as to leave no doubt that it was an epidemic of multiple neuritis.[2]

The cases of beri-beri are divided into two general classes, according to their severity.

There are, first, slight cases, in which the onset is gradual, being usually preceded by a little fever, coryza, and conjunctivitis, which cease when the actual symptoms commence. The patient first notices a weak and heavy feeling in the legs, and finds that he tires so easily that he cannot walk as much as usual. The tired feeling is soon associated with numbness and pain in the legs, and with a slight œdematous swelling. Then, if not before, palpitation of the heart, oppression and weight in the epigastrium, loss of appetite, and general malaise are felt, and the patient finds it necessary to apply for treatment. An examination then shows some diminution of power in the feet and legs, and also in the hands, with loss of tendon reflexes, and much tenderness in the muscles, which show a diminished electric excitability. There is never any ataxia, though the patient sways when his eyes are closed. There is discovered a slight degree of anæsthesia, of irregular distribution, chiefly in the legs and in the radial nerve region on the forearms. Though the patients look pale it is usually impossible to find anæmia by examination of the blood.[1] The circulation in the extremities is sluggish. The heart is irregular and rather rapid, and the œdema of the extremities indicates a failure of its power. Dr. Wallace Taylor[2] finds that a sphygmographic tracing is characterized by a sudden high upstroke in ventricular systole, by a precipitous descent from the apex of the percussion wave, and by dicrotism. Beyond this point these cases, which make up the majority, do not advance. They usually recover in a few days, or at

FIG. 6.



Sketch Map indicating the Geographical Distribution of Beri-beri. (From United States Marine Hospital Report, 1881.)

[1] Deutsche med. Woch., December 9, 1886 (an abstract only is given). See, also, Harada: Neurol. Centralbl., 1885, p. 326.

[2] Buzzard: On Paralysis from Peripheral Neuritis, p. 37.

[1] Studies in Japanese Kakke, by Wallace Taylor, M.D. Osaka, 1886.

most a month; although a few become chronic and require several months before the cure is complete.

There are, secondly, severe cases. These may present three different types. There is the atrophic or dry type, in which, after an onset similar in nature to that in the slight cases, but much more rapid, the weakness develops into a true paralysis, associated with marked wasting of the muscles and reaction of degeneration, with great diminution of galvanic excitability. Within a week the patient has to go to bed, and then the paralysis soon spreads from the legs to the arms, and may involve the trunk and even the face. The entire muscular system wastes away till the patient is a mere skeleton. In addition to the motor symptoms there is great sensory disturbance. The suffering from pain, paræsthesiæ, and general muscular tenderness is extreme, and the patient lies totally helpless and unable to tolerate the lightest touch. The skin may be glossy. There is usually some anæsthesia, but it is never complete, although it may involve the entire body. The temperature sense is seldom affected. Pain may be delayed in transmission. There are no gastric symptoms and no œdema. Some cases prove fatal from general exhaustion, or intercurrent disease, but the majority recover after a convalescence which lasts a year or more, during which the muscular system is rebuilt.

There is, secondly, the hydropic or wet type. In these heart-failure appears early, and is associated with a marked decrease of arterial tension and much œdema of the entire body, the effusion into the cavities being added to that beneath the integument. The swelling of the œdematous parts conceals the atrophy which is going on in the muscles, but this is indicated by the paralysis, which is as severe as in the preceding form, and it becomes evident during recovery when the œdema has subsided.

There is, thirdly, the acute pernicious type. In this all the symptoms of the two former types appear in rapid succession, and, in addition, gastro-intestinal symptoms and a suppression of urine combine to make the condition an alarming one. Effusions into the pleura and pericardium appear early. The pulse becomes small and irregular, and cyanosis indicates the heart-failure which precedes death.

In this form the disease may run its course in two weeks to a fatal termination. This was the form which chiefly prevailed in Manila, the cases of the atrophic form being the ones which recovered.

The severity differs much in different epidemics, the mortality varying from two per cent. in Japan to sixty per cent. in Manila. It is usually not above three per cent. In all the forms there is some danger of a sudden heart-failure, and this is usually the cause of death.

The morbid anatomy of the disease is, primarily, a multiple peripheral neutritis, with, secondarily, numerous organic changes in various organs, none of which, however, are essential to the disease.[1]

While we cannot join in the wish expressed by an enthusiastic German author, that the disease may soon become a familiar one to those outside of Japan, we cannot pass it by without a brief reference, especially as it resembles in so many of its features, as well as in its pathological basis, the condition which has occupied our attention at present. And it may not be unprofitable to obtain a clinical picture which differs somewhat from that already viewed, in connection with the forms more familiar to us, in order to detect sporadic cases of the disease, if such should appear among us. As to its treatment, it may be mentioned that quinine failed to influence its course, and that heart stimulants to combat the dangerous complications, hypnotics to counteract the pain and insomnia, and general tonic treatment have proved of the greatest service. Change of climate often is attended by recovery. In the stage of recovery electricity and massage have been employed with advantage.

(To be concluded.)

[1] Scheube: Virch. Archiv, Bd. 95, S. 146.

ORIGINAL ARTICLES.

THE SURGICAL TREATMENT OF DISEASES OF THE GALL-BLADDER.[1]

BY JUSTUS OHAGE, M.D.,
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GALL-STONES in the human subject are not of rare occurrence. They are less frequent in men than in women. Stein[2] collected 620 cases, of which 377 (61 per cent.) were in women, and 243 (39 per cent.) in men. They occur mostly after the age of thirty, and cases are rare below that age.

The etiology of gall-stones is as yet rather obscure. Although errors in diet—too much meat-diet, for instance—peculiarities in the nature of the soil in certain localities, sedentary habits, lacing, etc., may have some influence upon the formation of gall-stones, their origin is, perhaps, referred with more justice to a too small number of daily meals, in consequence of which the gall-bladder is less frequently emptied than it ought to be.[3]

Gall-stones may exist in the body without giving rise to any symptoms whatever. We often find them on the dissecting-table in subjects in whom, during life, they caused no inconvenience whatever. They first become of importance, if, from some cause or other, they start from their place of origin, giving rise to excruciating pains, and occasioning conditions which, in their consequences, are exceedingly dangerous to health and life. Death due to gall-stones is not very uncommon. The treatment of cholelithiasis, or gall-stone disease, by internal medication has been unsuccessful and hopeless, and yet, until a few years ago, no attempt was made to resort to the knife to cure a disease with which internal medicine was unable to cope.

Fear of fatal peritonitis, difficulty of diagnosis, and the severity of the operation, were the reasons which deterred surgeons, and left the field to internal medicine to ease the unfortunate patients by opiates, etc.

With Sir Joseph Lister's introduction of antiseptic surgery a new era appeared. Step by step opera-

[1] Read before the Ramsey County Medical Society; St. Paul, Minnesota.

[2] Eichhorst: Pathologie und Therapie, i. p. 973.

[3] Frerichs: Diseases of the Liver, iii. p. 201.

tions, each surpassing the other in boldness and success, were performed; the abdomen with all its contents was successfully made subject to the surgeon's knife; and operations, but a few years ago considered absurd, have been legalized, and proved the means of saving many lives. Thus, by gradually extending the limits of abdominal surgery, the diseases of the gall-bladder and liver were finally made amenable to surgical treatment.

I do not wish it understood that surgical interference is necessary in all cases of gall-stones; it is only required where their dislodgement and subsequent obstruction to the biliary canals cause dangerous conditions which internal medicine is unable to avert, and which, as a rule, without surgical aid, will sooner or later cause the death of the patient.

But further, as any person suffering from gall-stones is at no time secure that on their way from the gall-bladder to the bowel they may not become arrested in their passage, thus causing obstruction and its consequences, which are so eminently dangerous, would it not be proper and conservative surgery to operate early, thus sparing the patient days of untold agony, and saving many a valuable life?

What surgeon would nowadays allow a woman with an ovarian tumor to die without giving her the chance of an operation? Where are the contra-indications to ovariotomy if performed by a competent surgeon? If we look back ten or twenty years, and see a mortality of over thirty per cent. after ovariotomy reduced nowadays to almost none; if we consider how many thousand women have been saved from death by this one operation, and if we consider that cases of cholelithiasis are nearly as frequent as ovarian tumors, the questions arise: Why are so few operations upon the gall-bladder performed? What is their death-rate, and what is the result?

The reason so few operations are performed is because of the difficulty of diagnosis, the tendency to treat gall-stone disease by internal medication, and in an insufficient understanding by the profession at large of the possibility of successful surgical treatment. How many cases of chronic colic, gastralgia, neuralgia of the liver, and jaundice, are cases of gall-stones?

The death-rate after operations upon the gall-bladder is not so high as that after ovariotomy at its infancy, and with a better understanding, and with experienced operators, it will probably become as low. The results compare favorably with those of ovariotomy—a complete restoration to health is obtained.

The history of the surgery of the gall-bladder presents a great similarity to that of ovariotomy.

Hippocrates, Galenus, and Aretæus gave descriptions of gall-stones and diseases dependent upon them. The eminent French surgeon, Petit,[1] in the last century proposed an operation similar to lithotomy for the removal of gall-stones. If the gall-bladder was dilated and adherent to the abdominal walls, it was punctured, or fistulæ were dilated by tents and through these openings the stones were extracted with the aid of long forceps. In this way Vogel, a surgeon of Lübeck, in the last century, thought he had performed one of the "very finest surgical operations."

Another hundred years passed by until Dr. Marion Sims[1] planned and performed cholecystotomy in a case of dropsy of the gall-bladder due to gall-stones. This was in April, 1878. His patient died in nine days from exhaustion and protracted hemorrhages; still he showed the feasibility of the operation, at the same time teaching the valuable lesson not to wait until the patient's strength becomes exhausted or his blood bile-poisoned. Kocher,[2] in June, 1878, was the first who performed this operation successfully; his patient recovered in five weeks.

Musser and Keen[3] were able to tabulate up to October, 1884, thirty-five cases with ten deaths. Of this number six, which were cases of cholecystectomy, or extirpation of the gall-bladder, ought to be excluded. Five were reported by Tait in the *British Medical Journal* of May 3, 1884. No names of operators are given or other details, but three deaths and two recoveries are tabulated. The other one was Langenbuch's, No. 13 of Musser and Keen's table. This leaves twenty-nine cases, with seven deaths, reported from all sources up to October, 1884. Since then there are recorded successful cases: Tait seven,[4] Courvoisier one,[5] Trendelenburg one,[6] König one,[7] Böckel one,[8] Parkes one,[9] Carmalt one,[10] Hutchinson one,[11] Ohage one,[12] Robson two.[13] Fatal cases: Parkes two,[14] Lange one,[15] and Wetzel one.[16] Making in all fifty cases with thirty-nine recoveries and eleven deaths—a mortality of twenty-two per cent. These were all cases of cholecystotomy or *in*cision of the gall-bladder in contradistinction to the cases of cholecystectomy or complete extirpation of the gall-bladder, which I shall give further on.

I would like to draw attention to the difference in these two words. Their framing, composition, and designation are as clear and precise as can be. Few technical terms correctly explain as fully and anatomically their meaning as cholecys*tot*omy and cholecys*tect*omy do, and yet in looking over the literature of the subject there is as much confusion in regard to their understanding as there is regarding Tait's and Battey's operation.

Cholecystotomy: χόλη, bile; κύστις, bladder; τέμνω, cut—*i. e.*, cutting the gall-bladder.

Cholecystectomy: χόλη—κύστις—ἐκτέμνω, to cut *out*—*i. e.*, cutting *out* the gall-bladder—extirpation.

[1] Albrecht: Lehrbuch der Chirurgie, 1882, iii. p. 390.

[1] British Medical Journal, 1878, i. p. 811.
[2] Cor. Bl. f. Schweizer Aerzte, 1879, viii. p. 577.
[3] American Journal of the Medical Sciences, October, 1884, p. 344.
[4] Lancet, February 13, 1886.
[5] Cor. Bl. f. Schweizer Aerzte, No. 15.
[6] Reported by Witzel.
[7] Verhandl. d. deutsch. Gesellsch. f. Chirurgie, 1882.
[8] Gazette médicale de Strassbourg, No 8, 1884.
[9] American Journal of the Medical Sciences, July, 1885.
[10] THE MEDICAL NEWS, May 8, 1886.
[11] THE MEDICAL NEWS, May 22, 1886.
[12] Northwestern Lancet, October, 1886.
[13] British Medical Journal, October 31, 1885.
[14] THE MEDICAL NEWS, May 8, 1886.
[15] THE MEDICAL NEWS, January, 1886.
[16] Deutsche Zeitschr. f. Chirurgie, xxi. S. 139.

CASE I. *Cholecystotomy; impaction of stone in the common duct; empyema of gall-bladder; removal of forty-four stones; recovery.*—Mrs. Johanna S., Swede, æt. forty-two, married, mother of several healthy children, called at my office, February 23, 1886, and gave the following history: Had been more or less of an invalid for the last twenty years, suffering, at times, excruciating pains, referred to the right hypochondrium, extending to the right shoulder, and clear across her body. Paroxysms of pain of variable duration, often lasting for weeks, sudden in onset and disappearance. Had often been jaundiced. Two weeks prior to my seeing her she had another attack, accompanied and followed by chills, and the pain increasing and being of a more severe character than ever before, she was removed to St. Paul, a distance of forty miles, and brought to my office for treatment.

On personal inspection I found a slender, emaciated woman, whose face wore an expression of severe suffering; skin slightly icteric; pulse feeble at 120; temperature, 38° C. (101° F.). In the right hypochondriac region a tumor, about the size of a fist, could be felt, which was slightly movable, and which followed the respiratory movements of the liver. By palpation and percussion it appeared adherent to this organ. Pressure upon it, no matter how light, caused pain and nausea. The shape of the tumor was oviform. Fluctuation could not be detected. Urine showed the presence of bile. She had also suffered from dyspeptic symptoms, and the feces were clay-colored. Other organs healthy.

Diagnosis.—In consideration of her history, which was very intelligently given, and the results of the present examination: Cholelithiasis, impaction of a stone in the ductus communis (icterus and enlargement of the liver), beginning abscess formation (chills, elevated temperature), and enlargement of the gall-bladder.

I proposed an operation to her, to which she gave her consent. She entered the St. Joseph's Hospital, of this city, the same day, and the next morning, February 24th,[1] I operated, assisted by Drs. Nelson, Schulin, and the house-surgeon, Dr. Thompson, in the presence of Drs. Murphy and Hoyt, under strict antiseptic precautions, except spray. Temperature of operating room 90° F. Ether narcosis. Vertical incision about six inches long at outer border of right rectus muscle, beginning above at the margin of the eighth rib. After all hemorrhage, which was profuse, was controlled, I opened the peritoneal cavity in the usual manner, and encountered a mass which was firmly adherent to the liver, colon, and all neighboring organs. It was impossible to differentiate one part from another, to such a degree had inflammatory changes during a disease of twenty years' standing effaced all anatomical relations.

After considerable careful and difficult work I was able to expose the lower anterior part of what seemed to be an enlarged and thickened gall-bladder. Further examination proved this to be the fact, and not daring to make an incision at once into the bladder, fearing, in the first place, excessive hemorrhage into an open peritoneal cavity; and, secondly, not being certain that stitches would hold in the soft mass while trying to sew it to the abdominal wound, I concluded to fasten the gall-bladder in the abdominal wall unopened, and wait before opening it until adhesions between it and the abdominal wound had formed. I introduced my hand again, and tried to get above the whole mass, hoping I might still be able to separate the gall-bladder, and then to extirpate it, but it was impossible, and the hemorrhage was so profuse from the torn adhesions that I had to abandon the object. I then sewed the edges of the peritoneum to the abdominal wall, slightly everting them, and then closed the upper part of the wound by deep and superficial silk sutures.

The lower part of the wound, about two inches, where the exposed gall-bladder presented, was left open, and here I tried to fasten it to the abdominal wound by a few stitches. But every stitch tore through, no matter how carefully knotted. Nothing was left to do but to pack the wound until adhesions had formed. After cleaning the wound with a 1 : 2000 corrosive sublimate solution, and dusting it freely with iodoform, I laid some iodoform cotton, twisted into an oval shape, around the abdominal wound, thus pressing the wound down upon the edges of the gall-bladder, holding it in position by a large pad of absorbent cotton, and an abdominal binder, well tightened. The operation had lasted about three-quarters of an hour; there was no shock.

Patient was put to bed, and hot bottles put to her feet. She reacted well from the ether, complained of no pain, and felt quite comfortable. Diet for the first three days: Cracked ice, iced milk, coffee, and beef-tea. Temperature gradually rose until it reached 103° F. on the fourth day at 6 P. M. (aseptic fever). No sign of peritonitis, or even peritoneal tenderness. Bowels were moved by clysma on the fourth day, and were clay colored, showing that the obstruction still existed. Temperature gradually declined until it reached nearly normal on the seventh day.

On the morning of March 3d, the eighth day after the operation, I removed the dressing for the first time, and found the upper part of the abdominal wound healed by first intention, and firm adhesions between the gall-bladder and lower part of wound.

Assisted by Dr. Nelson, the house-surgeon Dr. Thompson, and the Sister in charge, I made a simple incision through the walls of the gall-bladder—which were more than half an inch thick—large enough to admit a finger, and evacuated about half a pint of greenish-looking pus. On introducing my finger, I could feel the stones on the bottom of the sac, and with the aid of a pair of forceps I removed forty-one of them. Having emptied the gall-bladder of all its contents, I next examined the ducts with a tin sound and encountered another large stone in the common duct. While attempting to extract this, it broke, and I had to remove it piecemeal. After this the ducts were free and patulous, and I could pass the sound into the duodenum. The sac was washed out with a 1 : 3000 corrosive sublimate solution, a

[1] Reports, St. Joseph's Hospital, St. Paul, Minnesota, 1886.

drainage tube put in, and a dressing of absorbent cotton applied. This second operation was done without any narcosis; the pain was insignificant.

On the third day there was a rise of temperature to 101° F. The dressing was changed, the cavity washed out as before, and two more stones removed. After this the temperature and pulse were normal, appetite good, bowels regular, and feces of natural color. Patient sat up on the twelfth, and went out on the fourteenth day after the first operation. The dressing was changed every day, and the sac washed out with a weak (1 : 6000) corrosive sublimate solution. There was a little discharge of bile and mucus. Drainage tube removed on the fifteenth day; wound closed rapidly.

Three weeks after the first operation the wound had completely healed, with the exception of a pin-hole fistula, which discharged a small quantity of bile-colored mucus daily. After staying a few weeks in the hospital, the patient went home and assumed the duties of a housewife, being in every way able to do her work, which for many years her disease had obliged her to forego. She has called on me several times since, and enjoys perfect health, but the fistula—which now and then closes—at times becomes painful, reopens, discharges a small quantity of mucus, and then closes again.

CASE II. *Cholelithiasis; cholecystectomy; impaction of stone in cystic duct; hydrops of gall-bladder; complete removal of gall-bladder with 135 stones; recovery.*—Mrs. Lena A., Swede, æt. thirty-five years, married, multipara, called at my office on September 23, 1886, complaining of constant pain in the right hypochondriac region, extending to the right shoulder and stomach. This pain, which commenced about three months ago, had been preceded for the last three years by often repeated attacks of "colic" of variable intensity and duration. The pain always started from the right side. She had several times been jaundiced, and suffered considerably from deranged digestion.

On examination I found a strongly built, well-proportioned woman, with a clear, not icteric skin. In the right hypochondriac region an oblong tumor could be felt which was freely movable and painful to the touch. Palpation and percussion proved its upper portion to be in contact with the liver, while its lower end almost reached the iliac fossa and could be moved across the median line. The tumor followed the respiratory movements of the liver. There were dilatation and chronic catarrh of the stomach. Feces of natural color. Urine normal. All other organs healthy.

Diagnosis.—Cholelithiasis. Enlargement of gall-bladder due to obstruction of cystic duct by a stone. The possibility of the tumor being a movable kidney or an echinococcus was considered.

Operative treatment was proposed and readily accepted, and the patient was conveyed to St. Joseph's Hospital the same day. The following morning, Sept. 24, 1886, I operated, assisted by Drs. Nelson, Schulin, Dedolp, Jr., Denny, and the house-surgeon Dr. Welsh, under strict antiseptic precautions, no spray. Room temperature about 90° F. Ether narcosis. Vertical incision about six inches long on outer border of right rectus muscle, beginning above at margin of eighth rib. Very little hemorrhage. Peritoneum opened in usual manner after all bleeding was controlled.

As soon as the abdominal cavity was opened the tumor presented itself, which proved to be an enormously distended gall-bladder with exceedingly thin

FIG. 1.

Gall-bladder, removed from Case II.

walls. After pushing the bowels aside and getting my hand under the liver, I detected a large stone firmly impacted in the cystic duct, completely obstructing it. All the gentlemen assisting me followed my example and each felt the stone plainly. The walls of the gall-bladder were so exceedingly thin that the greatest delicacy was necessary in handling it. Yet, unopened as it was, it promised such a good hold in handling it while detaching it from the liver, that I did not now aspirate it, as Langenbuch does, but first separated it completely from all sides. After this was done, by careful manipulation I succeeded in working the obstructing

stone from the cystic duct back into the gall-bladder. All ducts were now closely examined. They were free and unobstructed. I now ligated the cystic duct with carbolized silk, and punctured the base of the gall-bladder with the point of a knife, evacuating more than a pint of a transparent muco-serous liquid and a few small stones, the gall-bladder being meanwhile held outside of the abdomen. After it was emptied of its liquid contents, I divided it close to the ligature with the Paquelin cautery and removed it with all the stones it contained, 135 in number. The ligature was cut short and the stump,

FIG. 2.

Some of the stones of Case II.

after being dusted with iodoform, dropped. A few layers of Lister gauze, which had been stuffed into the abdominal wound to catch up any liquid that might escape, were removed; and after washing that part of the bowels and liver which had been exposed, with a 1 : 2000 corrosive sublimate solution, the whole wound was closed with deep and superficial silk sutures, iodoform freely dusted over it, and a large pad of absorbent cotton applied and held *in situ* by a binder tightly secured. No drainage tube was put in.

The patient reacted well. There was scarcely any shock, and aside from the usual ether vomiting, which was controlled by hypodermatic injections of morphia and cracked ice by the mouth, she was in every way comfortable. On the third day the temperature rose to 101° F., the highest point ever reached during her recovery. Her pulse never rose over 90. On the fifth day she was troubled by constipation, and her bowels were moved with a few doses of calomel. After this she had natural movements every day. There is nothing of special interest in her convalescence. On the eighth day I removed the dressing for the first time, and finding the whole wound healed by first intention removed all sutures and simply supported the abdomen with a binder. She sat up on the eleventh, and went out on the thirteenth day after the operation. Her appetite is good, bowels regular, and feces of natural color, she is free from all pain and has in every way fully recovered.

The points of greatest interest in these two rather analogous cases lay in the difference of the operative procedures, and in comparing their ultimate and immediate results with one another.

(*To be concluded.*)

ALBUMOSE- AND PEPTONE-FEVER.

PRELIMINARY NOTE.

BY ISAAC OTT, M.D., AND CHARLES COLLMAR, M.D.,
OF EASTON, PA.

THE discovery by us that trypsin, when injected into the circulation causes fever (3½° F.), led us to investigate more minutely the action of this ferment.

Fairchild's trypsin was treated by saturating it with sulphate of magnesia, to remove any globulin that might be present, and the filtrate was heated after the method of Hofmeister to remove all the albumin, except the peptone. By this method we obtained a solution of peptone plus a saturated solution of sulphate of magnesia and a little acetate of sodium. To remove a greater part of the salts we submitted the solution to dialysis, and the solution coming through was evaporated to a small bulk. Alcohol was added, which precipitated the magnesium salt and the peptone, but the salt being heavier rapidly fell to the bottom of the test tube. The alcohol containing the insoluble peptones was rapidly decanted, evaporated to dryness, and the peptone dissolved in water.

The solution was then injected into the jugular, and a rise of temperature occurred. These experiments, as well as others by dialysis, demonstrated that trypsin caused fever, not through itself, but by a peptone. This led us to try other agents, and we found that Merck's meat peptone and papayotin also caused fever. In fact, the highest fever we have so far obtained has been by papayotin. These experiments led us to try the albumoses and peptones.

Through the kindness of Prof. Chittenden, of Yale College, we obtained albumoses and peptones. His name is a sufficient guarantee of their purity, as his researches upon these subjects are well known. When either proto-albumose or deutero-albumose, anti-peptone or ampho-peptone, were injected into the circulation, fever ensued, notwithstanding the dose was not over one-sixth of a grain. The effect of these bodies upon heat-dissipation and heat-production, how they act upon the inhibitory heat-centre discovered by one of us, will be detailed in the full report.

The large amount of albumoses and peptones poured into the system daily causes this subject to be one of great interest, for any deviation of the usual phenomena of absorption and assimilation might be fatal to the patient.

These experiments were performed on etherized rabbits, the number being twenty.

A NEW OPERATION FOR PROLAPSUS ANI.[1]

BY FREDERICK LANGE, M.D.,
OF NEW YORK.

THE patient whom I intended to present to you, but who has not appeared (probably being prevented by his professional duties as a detective), is not yet forty years of age, though he looks much older. For almost twenty years he had been suffering from prolapsus recti, with more or less incontinence. It seems that an inflammatory disease of the rectum (probably dysentery), accompanied with intense tenesmus, was the original cause. He has been operated upon a number of times after the usual methods (cauterization and excision of the mucous membrane), but apparently with only transient and partial relief.

[1] Read before the New York Surgical Society, Jan. 26, 1887.

After one operation, done by my colleague, Dr. Adler, he was improved for several years; altogether he had undergone five different operations, when, in October last, he was readmitted to the German Hospital. He suffered from incontinence as before. The anal ring was quite relaxed and wide open, and even with slight pressure the rectum was extruded. The patient assured me that the prolapse was at times worse than ever before, and, from Dr. Adler's statement, I conclude that formerly the rectum would protrude to the length of fully six inches.

Not taking into consideration cases of partial prolapse of the rectal walls, we must admit that our methods of treating prolapsus recti do not yield very encouraging results. I once, in preantiseptic days, assisted at the operation of amputating such an extensive prolapse, after a preliminary operation, the purpose of which was to cause an inflammatory adhesion of the peritoneal layers. The patient died several weeks later from septicæmia. The amputation was done, if I am not mistaken, by the galvanocaustic snare. In our present aseptic age, I believe that such an operation, or a similar one, would be much less dangerous, but the question is, Would the result be lasting? So long as the lower part of the gut is allowed to pass through a widened and relaxed muscular sheath, which is formed by the levator ani and the sphincters, and the lowest portion of the rectum itself remains wide, there is always, I think, a strong probability of recurrence. I therefore, in my method of operating, tried to meet both indications, to narrow the rectum as high up as possible, and to fix around it a contracted muscular ring.

Anatomical and clinical observations lead me to infer that the levator ani takes an important part in the closure of the rectum. If one places the tip of his finger upon the anus, and then tries to make that muscular effort by which the passage of feces is prevented, it will be found that the anal orifice is not only lifted, but also drawn slightly forward against the perineum. This, I presume, is due to the action of those fibres of the levator ani, which, in passing behind the rectum and uniting with those of the opposite side, form a strong muscular arch, which in contracting must necessarily exert a pressure against the posterior wall of the gut, and in this way cause closure of the same.

I operated in the following manner: The patient was fixed on the table in the knee-elbow position, a thick cushion placed between his knees and under the lower part of his thorax and the upper part of his abdomen, giving a sufficient support; his legs were tied to the table, and his head rested sideways on a pillow. I have lately performed almost all of my rectal operations with the patient in this position, and I cannot recommend it enough. The hemorrhage is decidedly diminished, the parts are more accessible, and the principal vessels can nearly all be secured before they are divided. An incision was carried from the lower part of the sacrum down to the anus, until the posterior wall of the rectum was reached. I then removed the coccyx, for two reasons—first, I wished to narrow the gut as high up as possible, and, secondly, I thought that the proposed action of the levator ani might thus become less impeded.

The lumen of the rectum was narrowed in such a way that buried étage-sutures of iodoform catgut were introduced, which did not perforate the entire thickness of the gut, the first row being inserted near the middle line and forming a fold in the posterior wall which protruded into the rectum. In this way the more lateral portions of the gut, so far as it could be done without causing too much tension, were brought into apposition. Then the surfaces of the levator ani and sphincter externus, which had been dissected back in order to lay bare the posterior wall of the rectum, and next their cut surfaces were united by similar sutures. In order to secure a more lasting union, several buried sutures of silkworm-gut were also inserted into this muscular crest. Finally, a few sutures in the integument were introduced and the cavity corresponding to the removed coccyx was left open and loosely packed with iodoform-gauze.

The healing process proceeded without any special disturbance; everywhere the sutured parts united by first intention, and only from that portion of the wound which had been left open did a slight secretion take place. The patient's control over his bowels began to be manifest after the first few weeks, and never after the operation did the prolapse recur. Gradually the muscular closure became more and more complete, and now, if you insert your finger into the rectum, you will be able to make out a very strong voluntary action of the muscles.

I observe in this case the greater depth of the rima ani, and the fact that it is drawn inward by the action of the levator. I have tried, in a case of extirpation of the rectum for melanotic tumor, to secure muscular closure by uniting the levator ani. The result is not absolutely perfect, but the patient, a woman of about forty years, has more control over her bowels than these patients usually have. Only about three and one-half inches of the gut, including the sphincter, were removed in this case. Of course, in more extensive operations, where the gut cannot be sufficiently pulled downward, this plan cannot be executed.

AN IMPROVEMENT IN THE METHOD OF PREPARING BLOOD SERUM FOR USE IN BACTERIOLOGY.

BY A. C. ABBOTT, M.D.,
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To those who employ blood serum as a culture medium in bacteriological research, a short note upon an improvement in the method of collecting and preserving it may be of service.

The evaporation of water from serum when coagulated in test-tubes, ready for use, is so rapid as to render its preservation in this form, in large quantities, impracticable. Hitherto it has been customary to collect fresh serum for each supply of tubes that we required; and as only a small number of tubes could, in this way, be kept in a condition for use,

for reasons stated above, this procedure necessitated no inconsiderable loss of time. It is to obviate this loss of time that I have endeavored to devise a method by which serum might be kept in the laboratory in a fluid state, sterilized and ready for use when required.

The method pursued, in short, is as follows: One or two thoroughly cleansed museum or fruit jars, having covers that hermetically seal them, are filled with blood as it flows from the large vessels of the animal's neck. They are then immediately covered and set aside for fifteen or twenty minutes until clotting has commenced, when a clean glass rod is passed around the circumference of the upper surface of the mass, in order to break up any adhesions that may have formed between the blood and the walls of the jar, thus preventing the watery portions of the blood from occupying the upper part of the vessel when the clot is complete.

They are then placed in a refrigerator (the laboratory refrigerator is safer than leaving them in the ice chest at the slaughter house) at a temperature sufficiently low to prevent the development of the organisms that must have gained access during exposure, and yet not so low as to interfere with perfect coagulation. At the end of twenty-four to thirty-six hours a very considerable amount of serum will have separated. This is then pipetted off into thoroughly cleansed glass or wool-stoppered cylinders. The serum at this stage may be of a clear straw color or may be reddish from the admixture of red blood-corpuscles, the amount of color depending upon the care with which it has been transported from place to place. These cylinders are then *packed in ice* for at least three days, when all of the suspended coloring particles will have precipitated to the bottom, leaving a clear transparent supernatant fluid.

The clear portion is then carefully drawn off by means of a sterilized pipette into wool-stoppered 100 c. c. flasks that have been sterilized by dry heat at a temperature of 150° C. for at least an hour. Each flask should contain from 60 c. c. to 75 c. c. of the serum.

Sterilization by the fractional method is then begun and is continued through six successive days for an hour each day. In sterilizing after this method the temperature within the chamber should at no time during the hour be higher than 64° C., and, if possible, should not fall below 58° C.; a rise in temperature much above 64° C. causing cloudiness, and a fall to any extent below 58° C. not being sufficient to kill the organisms. At the end of six days the flasks containing the serum are sterile and may be kept indefinitely. By following this plan we not only have at hand a stock of liquid serum, but a serum that has stood sufficiently long to have become, by the precipitation of its solid particles, almost colorless and clear.

Larger flasks than are above advised might be employed, but as we rarely prepare more than fifteen or twenty test-tubes at a time, a flask containing more than 100 c. c. of serum would of necessity require sterilization after each opening, and it is to obviate this that the whole amount is distributed through smaller flasks that may, with but little loss of serum, be discarded after once having been exposed.

In the different steps of this process much care is necessary in order to limit the amount of bacterial contamination to the minimum, and the stage at which there is liable to be the greatest contamination is in collecting the blood as it flows from the large vessels in the animal's neck. The skin and hair about the wound contain countless organisms and were the blood allowed to flow over these surfaces before collecting it, its complete sterilization would be a matter of some doubt. To exclude this, the animal, before being killed, should be thorougly secured and then suspended by the hind quarters to the ceiling above, so that when the throat is cut the head may be freely drawn back and allow a vertical uninterrupted flow of blood from the vessels into the receptacle.

The importance of blood serum as a culture medium is seen in the fact that it presents the only artificially prepared substance upon which some of the most interesting and important of the pathogenic organisms will grow; but as its preparation has always involved quite a loss of time, it is, in a measure, discarded for some of the more conveniently prepared media.

We have pursued the above plan during the past twelve months, and it has proven satisfactory in every respect. There are now in the laboratory a number of flasks of liquid serum that were prepared in this way ten months ago, and, except that they are clearer, they differ in no respect from serum freshly prepared.

MEDICAL PROGRESS.

DIFFERENT METHODS OF TREATING CERVICAL CATARRH.—DR. L'VOFF, of Kazan, has reported in the *Meditsinskoe Obozrenie* a number of observations made on the comparative value of different methods of treating catarrh of the cervix uteri. The total number of cases was eighty-two. Of these thirty-six were treated by mechanical scraping of the mucous membrane, eighteen by means of powerful caustic applications, and twenty-eight with weak caustics. The method of applying the weak caustic was, after washing out the vagina with warm water or a solution of boracic acid, to swab the cervical canal with tincture of iodine or with a 10 per cent. solution of chromic acid. This was done once a week, plugs soaked in glycerine of tannin being also used every other day. The strong caustic application consisted of a bougie made of sulphate of zinc and alum fused together. This was allowed to remain in the canal till it had all dissolved, which took place usually in one or two hours. Afterward the mucous membrane presented a white appearance, due to the eschar. This fell off in five or six days, during which time warm vaginal douches were administered and plugs of glycerine and iodoform inserted every alternate day. In the cases treated by scarification an iodoform glycerine plug was left in for twenty-four hours, and the patient was then sent home. The results of these different methods of treatment were that the mild caustics

ultimately effected a cure, but required at least two months to do so; while the severer methods—that is to say, the fused zinc and alum and the scarification—produced a permanent cure in about a fortnight. The author adds that no unpleasant symptoms were caused by either the caustics or the scarification in any of the eighty-two cases.—*Lancet*, Jan. 22, 1887.

A SUCCESSFUL TREATMENT OF SCIATICA.—DR. JOHN T. METCALFE gives the following prescription, which he has used with marked success in sciatica:

℞.—Tinct. aconit. radicis,
Tinct. colchici sem.,
Tinct. belladonnæ . equal parts.—M.
Sig.—Six drops every six hours until relieved.

Dr. Metcalfe uses tablet-triturates, each of which contains three drops of the following mixture as the most convenient form in which to prescribe its ingredients:

Tinct. aconit. rad.,
Tinct. colchici sem.,
Tinct. belladonnæ,
Tinct. acteæ racemosæ, equal parts by volume.

One of these tablets is given every four, six, or eight hours, as may be needed.

Marked beneficial effects have followed its use in three days; and in neuralgia of the axillary and brachial nerves it has proved of great value.—*Boston Medical and Surgical Journal*, January 27, 1887.

DETERMINATION OF SEX.—KISCH, of Prague, has reviewed former theories on this subject, and found in 1972 births, 1023 males and 949 females; his results do not agree entirely with those of Hofacker and Sadler.

Kisch found when the man was older than the woman from 1 to 5 years, 294 male to 283 female children; when the disparity in ages was from 6 to 10 years, 327 males to 306 females; 11 to 15 years, 190 to 167; 16 years or more in difference of ages between man and wife showed 138 males to 113 females; when ages were equal, 34 males to 42 females were born.

When the woman was older than the man, 40 males and 38 females were born. When the man was older than the woman, and the woman's age was between 15 and 19, 280 male to 287 female children were produced; when the mother's age was between 20 and 25, 595 males and 513 females; when between 26 and 32, 74 males and 69 females. The observer concludes that when the man is at least 10 years older than the woman, and the woman is at the age of greatest reproductive activity (20 to 25), more male children than female are born. When man and woman are of equal age, female children predominate. Women older than their husbands produce more male children, but not an excess. —*Centralblatt für Gynäkalogie*, January 22, 1887.

ANTISEPTIC OPERATION FOR CATARACT.—PANAS describes the following as his method of antisepsis in this operation:

He employs the biniodide of mercury in the following proportions:

Hydrarg. iodidi rubri . . .	gr. ¼.
Spirit. rectificat. (90°) . . .	ʒv.
Aquæ destill.	quart 1.

The field of operation is irrigated with this fluid by means of a small instrument resembling an ordinary medicine dropper. The corneal flap is made of the greatest possible regularity and of considerable size.

The toilet of the pupillary field is made as complete as possible; fragments of the cortex, blood, pigment, air bubbles are carefully removed. The pupil is made to contract completely, and the iris is wholly reduced before the eye is closed. Several drops of eserine are instilled into the eye, and a vaseline ointment of this drug is introduced at the conjunctival cul-de-sac.

The eyes are gently closed, and each is covered with linen anointed with

Hydrarg. benzoat.	grs. 23.
Cerati	ʒiijss.

Carbolized cotton, in light compresses, is applied over this.

The dressing is renewed every twenty-four hours, taking care to open the eye as little as possible for three or four days.—*Les Nouveaux Remèdes*, January 24, 1887.

UNUSUAL SITE OF A HYDATID CYST.—A case of hydatid of the scrotum came under the care of MR. PHILIP E. MUSKETT in the Sydney Hospital during the course of last summer, and as this is an example of a very rare condition, a brief note will be of interest. The patient, aged twenty-five, had been in Australia since he was three years old, and in a sheep district where the water was very bad for four years before the swelling appeared; this was first noticed eight years before he came under treatment. During that time it had been tapped twice, and, on the second occasion, also injected with iodine. When admitted to the hospital "there was an intra-scrotal tumor, about the size of a large emu egg, on the right side. It was smooth in outline, and its general contour nearly oval. The tumor was tense and dull on percussion, but gave to the fingers on palpation the sensation of fluid within. There was no impulse on coughing, and it was irreducible. The position of the testicle at its posterior part was made out by the presence of testicular sensation. The cord could not be clearly defined at the upper portion of the swelling. Light was transmitted by the ordinary manner of procedure, and, finally, the history had been that of an eight years' growth; painless, except from its mere weight." The cyst was tapped on the day following admission, and about an ounce of "serous-looking fluid" of pale yellowish tinge evacuated. Suppuration followed this tapping, and thirteen days later about six ounces of purulent fluid were drawn off. After this pus drained away from the puncture for eleven days, then a hydatid sac partly forced its way out, and was partly extracted through this opening. The sac was grayish in color, translucent, and elastic, and in its sunken condition would about fill an egg-cup. The swelling gradually subsided, the sinus closed, and the patient left cured.—*Lancet*, Jan. 29, 1887.

USE OF SALOL.—KLEEFELD, of Görlitz, reports from his clinic the following results obtained by the use of this drug. His use extended over a period of three months, and in thirty-five cases of rheumatism and varying forms of neuralgia he obtained the best results.

There followed no ill after-effects from its administration; ringing in the ears occurred infrequently and was not severe.

It is tasteless, odorless; is taken willingly.

Its price is low.

Large doses, thirty grains, three times daily, were rarely given; as good effects were obtained from doses of fifteen grains three times daily. It bears very favorable comparison with antipyrin and salicylate of soda in the diseases mentioned.—*Berliner klinische Wochenschrift*, January 24, 1887.

MORTALITY AMONG THE HABITUAL USERS OF ALCOHOL.—BAER, of Berlin, has compared the results obtained in England by the investigation of the mortality among those who dealt in alcoholic drinks and who used them, with statistics obtained in Prussia. Baer's information was obtained from official returns, gathered among brewers, distillers, beer, brandy, and wine handlers, keepers of inns and restaurants, waiters, bottlers, etc.

14,295 males, of whom 13,528 were more than twenty-five years old, were included in the inquiry. His results are as follows:

The years of life to be expected by persons of various ages who were not handlers of alcohol were compared with the portion of life remaining to those who used and handled alcohol constantly:

Non-handlers of alcohol aged

From	25	had	before	them	. .	32.08	years.
"	35	"	"	"	. .	25.92	"
"	45	"	"	"	. .	19.92	"
"	55	"	"	"	. .	14.45	"
"	65	"	"	"	. .	9.72	"

Those who had constantly to do with alcohol had in the future—

From	25	years	of	age	. .	26.23	years.
"	35	"	"		. .	20.01	"
"	45	"	"		. .	15.19	"
"	55	"	"		. .	11.16	"
"	65	"	"		. .	8.04	"

Causes of death among the constant users of alcohol and those not concerned with it were

	General male population. Per cent.	Alcohol venders. Per cent.
Brain disease . .	11.77	14.43
Tuberculosis . . .	30.36	36.57
Pneumonia and pleuritis	9.63	11.44
Heart disease . .	1.46	3.29
Kidney disease . .	1.40	2.11
Suicide	2.99	4.02
Cancer	2.49	3.70
Old age	22.49	7.05

In England 14 per cent. of deaths were caused indirectly by alcohol, 4 per cent. directly.

Baer calls the attention of those interested in hygiene to these statistics.—*Deutsche medicinische Wochenschrift*, January 20, 1887.

EFFECT OF IRON ON THE COMPOSITION OF MILK.—DR. MENDES DE LEON has made a number of researches and observations on the supposed effect of taking iron on the composition of the milk secreted. He finds that milk always contains a minute quantity of iron, which differs in different species of animals, cow's milk, for example, being richer in iron than human milk. He gave various preparations of iron to a healthy multipara, and analyzed the milk, but was unable to detect any increase in the iron it contained, so that it would appear that iron given to the mother does not act on the child by passing into its system, but that it may act by improving the general condition of the mother, and thus causing her to secrete better milk.—*British Medical Journal*, January 29, 1887.

THE ELASTIC LIGATURE FOR UTERINE FIBROIDS.—The removal of uterine fibroids by means of the elastic ligature having been recently adopted by Prof. Slavyanski in four cases, a paper has been published by one of his pupils, Dr. Zhabotinski, dealing mainly with the history of this method of operating. He has collected accounts of 216 cases, of which 151 are British (44 being Dr. Robert Lee's), 27 French, 20 German, 10 Russian, 5 American, and 3 Italian. Of these 18, or 8.3 per cent., proved fatal—8 from peritonitis, 3 from septicæmia, 3 from exhaustion, 1 from pleurisy and peritonitis, 1 from meningitis, 1 from tetanus, and 1 from an accidental disease. In 12 of these death occurred before the tumor came away, and in the remaining 6 after separation had taken place. The author thinks that the opinions of West and McClintock on the dangerous character of this method of procedure were formed on the results of too small a number of cases, and that as most of the published cases occurred in pre-antiseptic times, the danger with modern methods may be looked upon as very slight. The mode of procedure which Prof. Slavyanski adopted, and in which Dr. Zhabotinski's opinion is the best, is to cut away the tumor after the elastic ligature has been applied to the peduncle. This seems to have given the best results, even before the days of antiseptics. The main indications for the elastic ligature operation are a pedunculated condition of the tumor, an accessible situation, and a disposition to hemorrhage.—*Lancet*, Jan. 22, 1887.

A PRESCRIPTION FOR ACUTE BRONCHITIS.—MUIRHEAD, in the *Edinburgh Medical Journal* for January, 1887, gives the following as serviceable in the preëxudative period of acute bronchitis:

℞.—Vini antimonialis . . . ℥iij.
Liquoris potassæ . . . ℥ij.
Liquoris ammoniæ acetat. . . ℥iij.
Syrupi aurantii . . . . ℥jss.
Aquam . . . . ad. ℥vj.—M.

Sig.—One tablespoonful in wineglassful of water every three hours.

ABSORPTION OF CORROSIVE SUBLIMATE BY THE SKIN.—DR. KOPFF states in the *Przeglad lekarski* that, having made seven experiments with careful analyses according to the methods of Schneider, Schriddle, and Lehman, with the view of determining the power of absorption possessed by the skin for corrosive sublimate, he has found that healthy skin can absorb small quantities from aqueous solutions containing from one to two per cent. of the salt. The quantity absorbed, which, however, is never large, seems to depend mainly on the degree of concentration of the solution. The chloride of mercury is also invariably excreted very soon after it has been absorbed.—*Lancet*, Jan. 8, 1887.

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LITHOLAPAXY IN MALE CHILDREN.

IN all of our treatises and text-books on surgery it is dogmatically asserted that crushing a stone in the bladder of impubic male subjects, with or without rapid evacuation of the fragments, is a bad operation. This statement is based, first, upon the assumed undeveloped condition of the genito-urinary organs, the narrowness of the urethra, and the small size and sensitiveness of the bladder; and, secondly, upon the old statistics of lithotrity—that is to say, the operation which requires more than one sitting for its accomplishment—derived from the Moscow Clinic and the Children's Hospital of Paris, which show 12 deaths in 83 cases, or 1 in 7, as against 1028 cases of lateral lithotomy, collated by Thompson in the same class of patients, with 68 deaths, or 1 in 15. From these facts, or assumed facts, lateral lithotomy is held to be safer in children than crushing; but, as in other surgical procedures, as, for example, abdominal surgery, the question arises whether tradition, fortified by groundless objections, badly adapted instruments, and insufficient experience, has not stood in the way of progress in this direction, and condemned many children to a dangerous and, as a rule, unjustifiable cutting operation, namely, epicystotomy, the present fashionable craze, which might have been relieved by properly and skilfully performed rapid crushing, with evacuation of the fragments?

The most satisfactory answer to this question is to be found in a series of papers on "Lithotomy in Male Children" contributed to *The Lancet* for December 4, 11, 18, and 25, 1886, by Surgeon-Major Keegan, of Indore, Central India, which deserves the careful study of the practical surgeon. In this contribution the author gives a table of 58 cases, of which all save eleven are personal, of Bigelow's operation in children whose ages ranged from twenty-one months to fourteen years, with only 1 death, and that case should have been reserved for lithotomy, the stone having formed upon a "tilli" stalk. An analysis of the table indicates that the age of 27 patients varied from less than two to five years inclusive, and that the fatal case occurred in this class; that 24 were between six and ten years inclusive; and that 7 ranged between eleven and fourteen inclusive. The time occupied by the operation varied between four minutes for a uric acid stone which weighed seven grains, and three hours for an oxalate of lime calculus which weighed seven hundred grains, and required for its crushing not less than twenty-six insertions of the lithotrite. Of 56 cases in which the weight of the débris is noted, it was less than fifty grains in 26, from fifty to a hundred grains in 9, from one hundred to two hundred grains in 11, from two hundred to three hundred grains in 6, from three hundred to four hundred grains in 3, and seven hundred grains in 1. More than two thirds of the calculi were composed of uric acid or oxalate of lime.

From this presentation of the facts derived from a study of the table, we do not wonder that Keegan asserts that the only cases of stone in male children which he reserves for lateral lithotomy are those in which litholapaxy—not lithotrity, be it marked—is contraindicated by the existence of a very narrow urethra, or the presence of an abnormally large or hard calculus. The facts and figures support his views, and they also prove that the objections concerning the condition of the genito-urinary organs in impubic subjects are not valid. The undeveloped state of the prostate is an advantage; the bladders of boys suffering from a stone are, as a rule, healthy, and relatively capacious; those of subjects two, three, or four years old, being roomy enough to permit the efficient working of a suitable lithotrite and evacuating tube. The objection that the organ is extremely sensitive may be disregarded, as the operation is always performed under the influence of an anæsthetic. It is, moreover, not true that the calibre of the urethra is small, a fact of which all lithotomists are aware, and which leads them to use a relatively large staff. Should the meatus be small, an incision discloses that a lithotrite of considerable size will readily pass into the bladder, and it is due to the fact that the meatus was seldom divided in the old and dangerous operation of crushing in boys that the true calibre of the urethra was not discovered. A still further study of the table shows that from twenty-one months to thirty-four months a lithotrite, No. 7 of the English scale, was admitted and manipulated with ease; that during the

third and fourth years, No. 8 was generally employed; and at five years, that No. 10 was resorted to in five-eighths of all cases. Without going into further details, it may be said that lithotrites, Nos. 8 and 10, were most frequently used, and that with a No. 8 lithotrite and a No. 8 evacuating catheter, mulberry calculi, weighing between two and three hundred grains, were disposed of in an hour's time.

Given a light hand and gentle and careful manipulation, litholapaxy in boys differs from that operation in adults only in the size and construction of the instruments used. The size of the lithotrite should correspond with that of the urethra, so that the surgeon should be provided with a set running from No. 6 to No. 10 of the English scale, the meatus being divided as a preliminary measure when it is small. The only perfectly safe form is one with the female blade completely fenestrated, which cannot become clogged with débris, a dangerous complication from the liability of wounding the urethra by sharp fragments. The evacuating catheter should be as short as possible, and be fitted with a stylet to dislodge any tightly wedged fragment which does not yield to the brisk working of the aspirator. Under all circumstances, it will be wise to pass the stylet before withdrawing the catheter from the bladder. It goes without saying that on account of the comparatively small size of the evacuating tube the stone should be pulverized, and that the surgeon should not be in a hurry to finish the operation.

The cases tabulated by Keegan were not selected, but taken as they came, some being feeble, and others suffering from chronic enlargement of the spleen from chronic malaria. The average stay of the patients in the hospital was seven days as against seventeen for lateral lithotomy, and many of them were practically well the day following the operation.

Litholapaxy in male children is certainly not to be undertaken by a novice. As in the operation in the adult, it requires skill, dexterity, patience, and judgment, and the surgeon who has had some successful experience with it in the adult is, with the aid of suitable instruments, more than justified, in the face of the facts which we have presented, in resorting to it.

It is well known that lateral lithotomy in impubic subjects is followed by most satisfactory results, the general mortality being only about 1 in 17. In the Norfolk and Norwich Hospital, 1 patient in every 15½ perished; in the St. Waldimir Hospital, of Moscow, 1 in 16⅓ succumbed, while the 72 cases of S. D. Gross show only 2 deaths, or 1 in 35. Turning to India, the results are far more striking. Thus, Rai Ram Naran Dass, of Calcutta, lost 1 child in every 27⅓, while Freyer cut 143 boys without a single death, a success as brilliant as it is unequalled. If the operations done in India alone be compared, the 225 lateral lithotomies of Dass and Freyer afford only 3 deaths, or 1 in 75, as against 1 in 58 for litholapaxy.

From the foregoing data it may be asked, Why practise, as advised by Keegan, a comparatively untried operation in a class of subjects in which lateral lithotomy affords such satisfactory results? At the present time, the figures are on the side of the cutting operation, and we ourselves hold that it will be the operation for children until further experience demonstrates the comparative safety of rapid crushing with evacuation of the fragments. In the meanwhile, the unlooked-for success attained by Keegan demands that surgeons who have had experience with crushing in adults should resort to it in children. If a cutting operation, with its attendant risks from wound complications, can be replaced by a procedure which brings about a more rapid cure and does away with suffering on the part of the patient and personal anxiety and inconvenience on the part of the surgeon, it certainly is the operation which should be selected when it is not absolutely contraindicated.

The recent impetus given to suprapubic lithotomy, especially by German and French surgeons, who appear to be remarkably unsuccessful with perineal lithotomy, has led to its great abuse when applied to young subjects. Instead of limiting the method to large and encysted calculi, many operators other than those who enjoy few opportunities of cutting for stone have resorted to it for concretions of such small size that they could readily and safely have been removed by perineal cystotomy. The procedure itself is an easy one, and the risk from hemorrhage is very slight; but its results continue to be so very bad that it is time to cry a halt. Indeed, since its revival, additional experience seems to show that it ought to be utterly relinquished, except under the conditions to which we have adverted.

This is not a harsh criticism. Thus, of 133 examples of epicystotomy in impubic subjects collated by Dulles, up to 1875, 21 per cent. died. The statistics of Gross, of Nancy, brought up to a few months ago, and including the cases treated by improved antiseptic methods, comprise 307 cases, with a mortality of 21.62 per cent. Hence, the rate of death is greater by 7 per cent. than from the old operation of crushing. Schmitz, of St. Petersburg, records, in Langenbeck's *Archiv*, Bd. xxiii. Heft 2, 1886, 41 examples of the high operation, with 15 deaths, or a mortality of 36.5 per cent. Of the 18 operations done in preantiseptic days, 10, or 55 per cent., perished; while of the 23 performed under antiseptic precautions, 5, or 21.73 per cent., succumbed. The latter figures show a remarkable agreement with those of Dulles and Gross, and, with Schmitz, we can affirm that the improved methods of treating wounds have

not diminished the death-rate for the high operation in boys. Hence, the present indiscriminate resort to epicystotomy in young males cannot be too strongly condemned.

In the present state of our knowledge lateral lithotomy may be said, without fear of contradiction, to be the operation for boys of all ages, although it may properly give way to the still safer median method in lads after the seventh year in whom the stone has not a larger circumference than rather more than two inches. At an earlier age the space is too small to remove any but a small concretion without much bruising. When a calculus is encysted, or when its bulk is too large to hope for its easy extraction through a perineal wound, epicystotomy is eminently proper, care being taken to use strict antiseptic precautions, and to suture the bladder. In the meanwhile we trust that the surgeons of this country and of Europe, who are known to deal largely with cases of urinary calculi, may be induced to furnish themselves with the proper instruments, and test the merits of Keegan's conclusions. If further experience proves that litholapaxy constitutes the safest and most satisfactory mode of ridding a child of a stone, it ought to replace lithotomy just as it is doing in the adult in suitable cases.

THE TREATMENT OF LABOR COMPLICATED BY A FLAT PELVIS.

THE proper management of simple vertex presentations, when the progress of labor is retarded by a diminished conjugate diameter, is a subject that must, at some time, have engaged the attention of all practical obstetricians. An expression of opinion will, therefore, be welcomed from WINTER, Schröder's assistant in Berlin, whose position insures him a vast experience, not only in the Frauenklinik itself, but also in the immense outdoor service connected with it.

As a result of his experience, and after a study of the statistics of labor complicated by a flat pelvis, Winter arrives at the following conclusions: That, in primiparæ, as the abdominal muscles are tense, powerful, and capable of giving efficient aid to the contractions of the uterus, as the child is not so likely to be as large as in subsequent labors, and as the lower uterine segment is not so easily stretched to a dangerous degree of attenuation, the expectant treatment will be found, in the majority of cases, to give the best results; operative interference being resorted to, as a rule, only after the head has become engaged in the superior strait, when the labor may be terminated by the application of the forceps. In multiparæ, on the other hand, as the child is apt to be larger than in first labors, as the abdominal muscles are relaxed and cannot be depended upon to aid efficiently the expulsive efforts of the uterus, and as the lower uterine segment may soon become excessively stretched, the early performance of version will often avert the danger of a ruptured uterus, or the formation of fistulæ, the result of prolonged pressure upon the maternal soft parts.

Winter thus occupies middle ground between the views of Schröder and Winckel, the former advocating early version in cases of flat pelvis when the engagement of the head in the superior strait is delayed, although there is nothing in the general condition of the mother or child that demands operative interference; the latter, on the contrary, advising an expectant treatment as long as the general condition of the mother and child remains good. The reasons, more in detail, that influenced Winter in forming the opinions that he holds, and the statistics of labor in multiparæ and primiparæ, treated actively and expectantly, may be found in the last number of the *Zeitschrift für Geburtshülfe und Gynäkologie*.

BIRTH-MARKS AS EVIDENCE.

A YOUNG woman in the ninth month of pregnancy lately appeared before a Mercer County, Pa., Justice of the Peace, and swore out a warrant for the arrest of a man on charge of assault, alleging that he had choked her, and twisted her left wrist, almost dislocating it. There were no witnesses, and the man's discharge was confidently expected. At the trial, which took place some weeks after the birth of the baby, the lawyer for the defence called for acquittal on the ground of lack of evidence, but the prosecution asked that the baby be admitted in evidence. The jury was then shown the marks of four fingers and a thumb on the neck of the infant, and a left wrist twisted out of shape and swollen, as if it had been suddenly wrenched. These birth-marks corresponded exactly with the injuries which the woman swore to having received a month before the baby's birth. It is stated that the prisoner was convicted.

Without doubt there are instances in which maternal impressions have influenced the physical condition of the fœtus, even so far as to induce local tissue changes. Such cases are, however, extremely rare, and for one genuine there are fifty spurious examples. On general principles we should say the judge should not have admitted the baby as testimony, and certainly no man should be convicted on such trashy evidence as is afforded by ordinary birth-marks.

PROTECTIVE INOCULATION AGAINST RABIES.

SINCE writing the editorial note in THE NEWS of last week, referring to Ernst's work, the full text of VON FRISCH'S latest cummunication has come to hand in the *Centralblatt f. Bacteriologie und Para-*

sitenkunde, No. 3, 1887. Several of his conclusions are opposed to those of Pasteur. Thus, he finds that animals inoculated with the virus of progressive intensity — desiccated cords of from fifteen to one day—do not resist infection with the fresh virus of street rabies. With few exceptions, animals submitted to the preventive treatment after subcutaneous injection with street rabies, died of the disease even when the incubation was prolonged to thirty-four days. Von Frisch thinks that more work must yet be done before we can with certainty adopt a preventive inoculation in cases of hydrophobia in man. From the fact that the more intense method of protective inoculation introduced recently by Pasteur, will itself produce the disease in animals, there is a danger that by this means the disease may be communicated to man. We trust that the experiments so favorably begun at Harvard may be continued with a view of settling these disputed points.

DISINFECTION OF THE HANDS.

REFERRING to the fact that after autopsies in certain cases, such as puerperal peritonitis and typhoid fever, the fingers remain impregnated for hours with a fetid odor, of which they cannot be deprived by repeated washing, DUCLOS states, in the *Revue de Thérapeutique*, that this can be instantaneously removed by the use of the potassic permanganate and the sodic bisulphite. The permanganate may be employed in the proportion of 5 to 1000, or 5 to 100, and the commercial solution of the bisulphite diluted with five parts of water. The method advised is as follows: First thoroughly wash the hands with soap and water; then in the permanganate solution, the time varying according to its strength, two minutes being sufficient if the solution be concentrated; the hands are then placed in the solution of the bisulphite, and they become at once white, the discoloration caused by the permanganate instantly disappearing.

Duclos claims that this method not only completely removes the repulsive odor, but also thoroughly disinfects the hands, and that it will prove useful to both surgeons and accoucheurs. So far as the latter class is concerned, they have no business with post-mortem examinations of infectious cases; and doubtless should the plan advised by Duclos be employed by them they ought to add to it the careful and thorough use of the nail-brush, to be followed by dipping the hands in a solution of corrosive sublimate 1 to 1000.

A MEETING was held in Brooklyn, on February 7, by the physicians of Kings County who are in sympathy with the "National Code of Ethics," to consider the propriety of organizing a new society. The necessary committees were appointed and action taken which will in the near future effect the establishment of a new county association.

AN effort has been made recently by the Kings County Medical Society to increase their building fund now in bank, amounting to $4000. The members have thus far subscribed about $6000, and they now look forward to the purchase of a property suitable for their meetings and for library purposes.

THE JOHNS HOPKINS HOSPITAL had expended upon its buildings, during the past year, $112,000, and during the current year $150,000 more is available, and this sum will almost complete the work on the buildings and grounds. The site is a high elevation, commanding a view of the entire city and harbor of Baltimore. It is terraced and ornamented with plants and trees. It is reported that the hospital will be completed and opened in October, 1888, with a capacity of three hundred or more beds. All expenses on account of construction and equipment have been defrayed from the income, which annually yields about $150,000, and the original endowment remains intact.

DR. J. C. SHAW recently resigned his position as Superintendent of the Kings County, N. Y., Asylum, resuming practice as a neurologist in Brooklyn. The vacancy has just been filled by the appointment, by the Charities' Commissioners, of Dr. John A. Arnold, the County Hospital physician, to be the general superintendent of the asylum and of the new "county farm" growing up at St. Johnland. He will be assisted by Dr. G. N. Ferris, who will reside at the asylum, and by Dr. D. A. Harrison at the St. Johnland farm.

A CASE of chloroform death occurred in this city last week in the practice of Dr. Wm. H. Pancoast. The anæsthetic was administered to a man aged thirty for the purpose of having adhesions of the finger tendons of the hand broken up. The usual remedies were applied without avail. The autopsy revealed the kidneys much diseased and an unusually fatty liver and heart, and a thin right ventricle.

PROFESSOR BILLROTH has been recently made a peer of the Austrian realm. Two members of the medical faculty of Vienna are now peers, Brücke and Billroth.

THE collections for the Hospital Saturday and Sunday Association fund, in Brooklyn, have this year amounted to $6227.48, an increase, as com-

pared with those of the year previous, of $595.14. This charity has just closed its fifth year, its first appeal having been made in 1882.

REVIEWS.

THE SCIENCE AND ART OF OBSTETRICS. By THEOPHILUS PARVIN, M.D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia. 8vo. pp. 701. Philadelphia: Lea Brothers & Co., 1886.

WHILE, in these days of many books, the literature of many departments of knowledge is overcrowded and a new volume should indeed show good reason for its existence, yet it cannot be said that there are too many medical writers in this country, or that those that we have are too prolific. Students of medicine, thereby meaning, in the widest sense of the term, those that are about to end their studies with their lives as well as beginners, will be glad to welcome Dr. Parvin's work on Obstetrics, from the mere fact that it adds another to the list of distinctively American medical books; but being read, the book will be welcomed for itself, for, compact in form yet scholarly and in many respects exhaustive, it may well serve as a text-book for the student, or as a book of reference for the busy practitioner.

There are several points, however, which the careful student will feel disposed to criticise. The great influence of French writers and of the French school upon the book is at once apparent, while the German authorities are comparatively neglected, which is unfortunate, for in medicine, as in many other respects, Germany has of late years surpassed France. Those obstetricians who are advanced students of pathology will regret that the fact that puerperal fever is nothing but pyæmia, septicæmia, erysipelas, scarlet fever, or diphtheria, these diseases occurring in the puerperal state, is not more sharply emphasized; that more definite information is not given about the four pus-producing micrococci of pyæmia, the vibrio and the production of a ptomaine in septicæmia, or the presence of the chain micrococcus of Fehleisen in certain cases of so-called puerperal fever.

The description of rupture of the uterus will prove perhaps the least satisfactory portion of the book. The statement that "the lesion may occur in any part of the organ, neck, body, fundus, or sides," stands in decided contrast with Schröder's assertion that "the tear is never found in the contracted muscular portion of the uterine body," and nothing whatever is said of the appearance of the contraction-ring, while the stretched walls of the lower uterine segment seem to be regarded, for the language is rather ambiguous, as the walls of the cervical canal.

On the whole, however, we believe the book will be a source of pleasure and profit to those who read it carefully. The obstetrical operations are particularly well described, and no uncertain note is sounded in regard to the importance of antiseptic precautions not only during such operations, but also in the general management of labor and the puerperal state.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, January 26, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. THOMAS S. K. MORTON read a paper on

ABDOMINAL SECTION FOR TRAUMATISM, WITH REPORTS OF FIVE CASES AND TABLES OF ALL RECORDED CASES.

The term "abdominal section for traumatism" is meant to include those cases where the operator deliberately opens the belly, or greatly enlarges an existent wound for the purpose of discovering intraperitoneal wounds, and, if they are present, repairing them as far as possible, together with more or less final cleansing of the peritoneal cavity. Such cases as those in which wounds of prolapsed viscera are simply repaired, and the parts returned to the abdominal cavity, are not included.

Dr. Morton has collated the records of fifty-seven cases of laparotomy for trauma, which include all the cases he has been able to find in the literature of the world. Of these, 36 died, and 21 recovered: mortality, 63 per cent. These 57 cases were done by 42 operators, viz., 23 United States operators did 35 operations, with 11 recoveries, and 24 deaths: mortality, 67 per cent. 9 English operators did 10 cases, of which 3 recovered, and 7 died: mortality, 70 per cent. 2 Australian operators did 2 operations, with 2 deaths. 2 French operators did 2 operations, with 2 deaths. 2 Russian operators did 2 operations, with 2 recoveries. 1 German and 1 Swiss, each did an operation, with success. 1 Italian operator did 2 operations, with 2 recoveries.

7 operations have been done in Philadelphia by 5 operators, with 2 recoveries and 5 deaths. 5 of these have been performed at the Pennsylvania Hospital by 3 operators, with 2 recoveries, and 3 deaths.

Of the 57 tabulated cases, 38 per cent. were for pistol- or rifle-shot wounds; 35 per cent. for stabs; 17 per cent. for ruptured bladder, and 10 per cent. for ruptured intestine. In every case which died after operation, lesions certain to cause death, if uninterfered with, were found. One case of penetrating wound was opened, in which no visceral injury was found; it recovered.

The indications for abdominal section for traumatism are in many cases very clear; in others, with only our present knowledge, exceedingly obscure. Taking up the consideration first of wounds, the operation is clearly indicated in every case in which penetration of the abdominal cavity is proven, and with fair surroundings it becomes one's duty to open the abdomen and search for wounds, for there are no omnipresent symptoms which invariably indicate intraperitoneal wounds, even when extensive. With reference to cases suitable for operation, besides gunshot wounds, stabs, etc., which have already been operated upon, he conceived that in the future many other traumatic conditions will be subject to interference by section, such as rupture of the stomach, gall-bladder, spleen, or kidney, ruptured bloodvessels, various hæmatoceles, etc.

Where there is a wound of the anterior wall of the abdomen, first prove perforation by cutting down to the peritoneum. That should be a sufficient warrant for

section. In wounds of the back some judgment must be exercised. In the majority of the cases recorded, and in nearly all the successful cases, the incision was median. In several instances, where section has been done for a special purpose, such as removing an injured spleen, the incision has been made on one side of the median line. In one case of stab wound which he saw, the original wound was enlarged and gave rise to great difficulty in the subsequent steps of the operation. One wound was overlooked in that case, which error was largely due to the position of the incision. The length of the abdominal wound is to be governed by the circumstances of the case. There is no harm in a long wound if it be properly treated. After opening the peritoneum, note carefully the abdominal contents. If we find feces, we are encouraged to prolong the search until the wound is found. If there is blood, we should look for the vessel injured. The search for wounds should be thorough and systematic. In most of the cases where wounds have been overlooked, it has resulted from not making a systematic examination. We should begin at the entrance of the œsophagus into the stomach, if it is possible to reach so high, go over the stomach and all the intestines, examine the mesentery, the rectum, and bladder, and look at the spleen. Unless this is done, wounds will sometimes be overlooked, and even with the utmost precaution they will sometimes escape detection. Only those who have seen these cases can imagine the difficulty experienced in finding such wounds, especially when the upper part of the transverse colon and the surrounding omentum are involved. If the intestines are much distended, it may be necessary to puncture them. It is important to remember that extravasation has followed such a puncture, and it should always be closed with a Lembert suture. If the vermiform appendix or an epiploic appendix is injured, it should be excised. In wounds of the intestine, it makes a difference whether the injury is the result of a gunshot or of a stab. Gunshot wounds are more apt to slough than knife wounds, and where many of the former are located close together, it has been found advisable to excise a portion of the gut including the numerous lesions. Probably a foot of the bowel may be excised without much disadvantage. Six or eight feet have been excised, but in this case the operation was followed by emaciation and death. In such a case it would probably be better to make several excisions. Perforations when found should be turned into the bowel by the suture of Lembert. Wounds of the large intestine and stomach are to be treated in the same way.

Where the ball has perforated the mesentery, the wound edges should be excised. This is the opinion of those who have done most operations. The opening is then brought together with stitches on both sides, or passing entirely through. If the omentum be badly injured, no harm will come from its excision. It may be ligated in various places and the whole cut off without injury. In a hernia case, he cut off what he supposed to be almost the whole omentum, and the man recovered perfectly. Where the spleen is wounded, the only method seems to be to excise the organ. This has been done, so far as he knew, twice. Wounds of the liver have been met with a number of times and all the cases have died. If the kidney is extensively wounded, its excision or complete drainage is indicated. If the ureter is divided, the only remedy is excision of the corresponding kidney. If the projectile has gone through the diaphragm, the same operation as in the case of the mesentery would be indicated, namely, excision of the edges and sutures. Of course, all bleeding vessels are to be tied. If this is impossible, the main trunk, even if this be the aorta, must be tied. Wounds of the uterus and appendages have not been dealt with, but would probably require excision.

Then there is another class of wounds entering the abdomen—that is, wounds through the vagina and rectum; for instance, a stab wound through the vagina. If we knew that it penetrated, abdominal section would be indicated. In all these cases contusions of the omentum and intestine frequently are found. In time, nearly all of these will slough and give rise to pus. In several cases death has been attributed to this cause. All severe contusions involving the mesentery or omentum should be excised. When they involve the intestine, the peritoneum should be united over them with Lembert sutures. The suture materials which he has seen used have been silk and catgut, and he thinks the latter preferable if fine and chromicized.

The sooner the operation is performed, the better are the chances of the patient. The cases in which the time is reported number forty-five. The average time after the injury for which operation was done, was eighteen and a half hours. The average time after the injury when the operation was begun in the successful cases was seven and three-quarters hours; the average in the fatal cases was twenty-three and one-quarter hours. These are significant facts.

It is always difficult to decide, in any given case, whether drainage should be employed or not. If there have been extravasation and numerous wounds, drainage seems to be indicated. Glass and rubber tubes have been used with apparently equal success and failure. He thought that tubes of glass or other hard material are to be preferred. Where there has been extravasation of the contents of the stomach or intestine, this is usually followed by great oozing of serum.

The final steps of the operation are irrigation and cleansing. Irrigation should be very large in quantity, and if the patient is suffering from shock, there is no better treatment than pouring hot water through the abdominal cavity. It probably acts directly upon the solar plexus. He has seen this used frequently with marked benefit. The patient will be in far better condition after the use of a gallon or more of water at a temperature of 100° to 110°, than before its application. It has occurred to him that in profound shock from other causes, it might be well to puncture the abdomen with some form of double canula and thus irrigate the abdominal cavity with large quantities of hot water. What shall be put in the solution used for irrigation? Several agents have been so used: Water, distilled water, boracic acid solution, mild solution of bichloride of mercury, and solution of carbolic acid. Carbolic acid should be expunged from the list. Bichloride of mercury, when employed, should be in very dilute solution—1 to 5000 or 10,000. Boracic acid was used in two successful cases in three per cent. solution in unlimited quantities. In four cases at the Pennsylvania Hospital the bichloride solution in the strength of 1 to 5000 and 1 to 10,000 was used, and

apparently without any bad effect. It was used in both of the successful cases there. Distilled water is very good, and especially in cases where extravasation has not occurred. Where there has been extravasation, purulent peritonitis set up, or it is not certain that all foreign matters have been removed, an antiseptic is indicated. Where we have a solution like that of boracic acid, possessing fair strength, with little danger of poisoning, it should be used. The parietal wound is closed and dressed in the usual manner.

One question in the after-treatment would arise in cases where a drainage-tube had not been left, and would be with reference to reopening the wound and draining where a large amount of serum was present. Each individual case must be decided for itself. The onset of violent peritonitis would be an indication for reopening the belly, irrigating and draining it.

The total number of cases of gunshot wounds recorded is 22. Of these, 5 recovered and 17 died, a mortality of 77 per cent. Of these 22, 18 were done in the United States; 4 recovered and 14 died, a mortality of 77 per cent. The foreign cases were 4 in number, with 1 recovery and 3 deaths, a mortality of 75 per cent. The first recorded case of gunshot wound treated by abdominal section is that of Dr. Kinloch, of North Carolina, in 1881. The first recovery was the case of Kocher, of Switzerland, in 1883. The first American recovery was a case operated on by Dr. Wm. T. Bull, of New York, in 1884. These 22 cases were done by 15 operators—11 American and 4 foreign. In Philadelphia there have been 2 cases of abdominal section for gunshot wound. One was done at the Pennsylvania Hospital two days since by Dr. Thomas G. Morton. In one case of gunshot wound a wound of the intestine was overlooked, with a fatal result. McKellar, of London, reports a case of two wounds of the lower portion of the sigmoid flexure in which it was impossible to introduce stitches. All that he could do was to throw a ligature around the wounds. The patient died, and fecal extravasation was found at the autopsy. In this case rectal distention by a colpeurynter might have been of some assistance, lifting the bowel up so that stitches could be inserted, for the openings were on the anterior wall. Such cases are, however, exceedingly difficult to remedy.

In all the cases of stab wounds, with the exception of one, the wound was produced by a knife. In that one instance, it was caused by a sharp splinter of wood. As we should expect, this table presents the most favorable showing. The total number of cases reported is 19. Of these, 12 recovered, and 7 died; a mortality of 36 per cent. These operations were done by 14 operators —10 American and 4 foreign. The 10 American operators did 15 operations, with 8 recoveries, and 7 deaths. The foreign operators did 4 operations, and all recovered. The first case on record is that of Kwiectuski, of Russia, April 15, 1883. The first American one is that of Dr. W. O. Roberts, operated on August 28, 1885. The first recovery was the case of Kwiectuski. The first American recovery was the case of Dr. Roberts. The credit of the first recovery properly belongs to Dr. Roberts, of the United States, for the Russian operator had a large wound already made, which he enlarged to a certain extent, and sought for the intestinal wounds. Dr. Roberts had but the small opening made by a penknife.

The total number of cases of ruptured bladder reported is 10, with 4 recoveries and 6 deaths, a mortality of 60 per cent. There were 9 operators—3 American and 7 foreign. The American operators performed 3 operations, with 1 recovery and 2 deaths. The foreign operators performed 7 operations, with 3 recoveries and 4 deaths. The first recorded case of abdominal section for ruptured bladder is that of Walters, of Pittsburg, in 1862. This case was also the first recovery. In Walters's case he diagnosticated rupture of the bladder, with infiltration of the peritoneum with blood and urine. He opened the abdomen, cleaned it out, and put in a drainage tube, but did not sew the bladder wound. The second case was that of Alfred Willits, of London, operated on June 12, 1876. This case died. The second American case was that of Dr. Bull, operated on October 27, 1884. This case also died. Two recoveries have recently been reported by MacCormac. Philadelphia has had one case, which was operated on by Dr. Joseph M. Fox, August 16, 1886, with a fatal issue.

The symptoms of ruptured bladder are more definite than those of most other cases. The condition of the bladder at the time when the injury is received is of some importance, but cannot always be ascertained. Shock is usually present, as in other cases. Pain in the hypogastrium, fruitless efforts at micturition, vomiting, hiccough, distention of the abdomen with fluid, the withdrawal of blood or bloody urine by the catheter, are all good indications. If there is no urine in the bladder, or none comes in, it is a fair sign. The catheter can sometimes be introduced to a great length, and occasionally the rent in the bladder wall may by this means be detected. The withdrawal of an enormous quantity of fluid is another indication. If warm water is injected, it may be felt by the patient in the loins and other locations. With the catheter in the bladder, the liquid sometimes ebbs up and down with the movements of respiration. Recently Dr. Weir, of New York, has suggested a test for ruptured bladder, which consists in injecting a certain amount of fluid and percussing over the region of the bladder. If a definite outline of percussion dulness is noted, it is a fair inference that the bladder is not ruptured.

It is important to determine whether the rupture is extra- or intra-peritoneal. Stephen Smith has shown, in a collection of 65 cases, that the peritoneum is injured in 80 per cent. of the cases. Max Bartles found, in an examination of 166 cases, that the rent was intraperitoneal in 98, and extraperitoneal in 54. In 84 cases of intraperitoneal rupture the rent was situated at the fundus in 40 cases; in front, near the fundus, in 9; posteriorly in 33; and at the side in 2 cases. In 50 cases of extraperitoneal rupture, the rent was at the neck in 19, anterior in 23, posterior in 2, and at the side in 6. In 15 of these cases there was fracture of the pelvis. In these cases, as a rule, the urine found in the peritoneum is healthy, and not decomposing. An interesting paper has been published by a Russian, giving the toxic effects of urine which has escaped into the peritoneal cavity.

The method of operating is an interesting one. Having determined upon interference by section whether the diagnosis be positive or not, a median incision should be made and enlarged to suit the convenience of the operator. The incision may at first be made down to the bladder, as for a suprapubic lithotomy. If

there is a wound in front, you may feel it if it enters the peritoneal cavity; but even this is fallacious. Having found the wound in the bladder, the first thing is to clean the peritoneal cavity. Next, it is necessary to get the bladder into a position to suture it. This has been, until recently, found one of the most difficult steps of the operation. To obviate this, distention of the rectum with a colpeurynter has been practised. More recently, as in the case of Fox, sutures have been introduced on either side, and may be combined with the use of the colpeurynter. MacCormac, who found considerable difficulty in bringing up the bladder, made a lateral incision on each side through the peritoneum. This liberated the bladder very greatly. These peritoneal wounds he stitched together in the usual way, but this might be improved upon by introducing the stitches as Dr. Emmet does when sewing up his relaxation incisions of the vagina or elsewhere—that is, by uniting the wound by stitches passed into its longitudinal diameter. It has been found that the cases in which the sutures penetrate all the coats of the bladder invariably terminate fatally. This must be borne in mind, and the sutures passed through only the serous and muscular coats. The bladder wound is to be brought together with Lembert sutures of silk or catgut.

The after-treatment brings up the question of drainage, which has been discussed. A catheter should be left in the bladder. Another important thing is to prove that the stitches effectually control the opening in the bladder. This is done by injecting some solution—better, a weak antiseptic solution—into the bladder. If there is any leakage, additional sutures should be introduced; or the first row of stitches, by a second set, turned in.

The total number of cases of rupture of the intestine reported is five, of which number none recovered. 1 operation was performed in America and 4 abroad—2 in Australia, 1 in France, and 1 in England. The first recorded case is that of F. H. Girdlestone, of Australia, February 14, 1883. The only American case recorded is that of Dr. E. A. Wagner, on August 2, 1886. One case fell, and pressed a truss down upon a descended hernia; one was thrown from a horse; two were kicked in the abdomen; and one was crushed by a horse. In five cases the small intestine was ruptured, and in one the colon was the part involved.

DR. NANCREDE desired to say a few words about his own case, which, he thinks, shows the important point, although he could not secure a post-mortem, that peritonitis is not the only thing we should dread. He saw the boy six hours after he had been shot. The wound was a little to the left and above the umbilicus. He vomited blood one hour and a half after admission, although the operation showed that both the anterior and posterior walls of the stomach had been perforated. He determined that the wound was a penetrating one, and made an incision in the median line, and he would warn any against enlarging the existing wound, if not in the median line. He found a wound of the anterior wall of the stomach, which he closed with fine silk, using a fine sewing-needle. Then he found a wound in the anterior wall of the duodenum, which he sutured. He next looked for and found a wound of the posterior wall of the stomach. A large ragged wound in the posterior wall of the duodenum was also discovered. Examination from the stomach down almost to the ilio-cæcal valve revealed no other wound. A careful toilet of the peritoneum was made and the wound closed. The boy did well for forty-eight hours, and never presented the least symptom of peritonitis. When peritonitis comes on suddenly there may be a profound condition of shock which will not admit of rise of temperature, rigidity of the abdominal muscles, flexion of the limbs upon the pelvis, pain, or any of the usual symptoms; but this is not the case in slowly developing peritonitis. The boy died on the third day with a series of convulsions, with a very high temperature. He believed that he died of sapræmia, due to the absorption of ptomaines. The cold water coil, which was used almost from the outset in both of the successful cases of Bull, of New York, was not used, and he thinks more opium was given than was wise.

We have long been taught to give opium in full doses in traumatic peritonitis, but he believes that many cases are killed by this treatment. When the initial symptoms are marked by collapse, low temperature, rapid, feeble pulse, and clammy skin, if you give large doses of opium simply to ward off the expected inflammation, you will probably kill the patient. If you give moderate doses of morphia with large doses of atropia, you will possibly rally the patient and carry him over the shock stage. He thinks that large doses of opium should not be given in peritonitis, unless guarded by atropia. It should be given by hypodermatic injection, for it is uncertain how much will be absorbed from the stomach. At the end of a peritonitis where, from the respiratory centres becoming involved and from interference with the action of the diaphragm by tympany, hypostatic congestion of the lungs is taking place, persistence in the use of large doses of opium will kill the patient. If the opium is reduced to a minimum and given with large doses of atropia, or atropia is alone exhibited, you will sometimes tide the patient over.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, January 26, 1887.

R. F. WEIR, M.D., IN THE CHAIR.

OPERATION FOR THE RELIEF OF CARCINOMA OF THE RECTUM.

DR. LANGE presented a patient, sixty-five years of age, with paralysis agitans, the result of prolonged submersion in icy water several years before. He entered the German Hospital in October, complaining of difficulty in defecation of four months' standing. On examination he was found to have adeno-carcinoma of the rectum, and the diseased portion was removed in the usual manner, four inches of the gut being excised. The wound healed well. There was some constriction a short distance from the anus, probably due to the contracted sphincter internus. He had control over his bowels until he reached the closet, but was unable to have a thorough evacuation, so that he was inclined to have another movement soon after. In this case no attempt was made to unite the ends of the *levatores ani*, and the patient was obliged to wear a supporter. In another patient the attempt had been made, and on introducing the finger into the rectum it was evident that there was some voluntary muscular action.

ACUTE OSTEOMYELITIS OF THE FEMUR AT AN EARLY AGE; SECONDARY NECROSIS IN LATER YEARS; NECROTOMY; PLASTIC OPERATION FOR CLOSURE OF A LARGE BONE-CAVITY IN THE LOWER PART OF THE FEMUR.

DR. LANGE presented a patient with the following history: The patient, whom you see before you, is forty-six years old, and is a native of northern Germany. When ten years old, he had, according to his statement, a serious and very painful affection of his right knee and thigh, which kept him in bed for one year. His physician had proposed amputation to him, but, through the wisdom and cleverness of a midwife, as he said, his limb was saved, and he was able to get up on crutches. A number of sinuses had opened, and for about eleven years suppuration persisted, but then ceased. The shape and shortening of the limb have always been the same since that acute disease as at present, and at no time had any surgical operation been done, nor had any bone come away spontaneously. Until about sixteen years ago (that is, about nine years) all remained healed. Then, however, sinuses formed again, and did not heal. I saw the patient about one year ago. He himself attributes this renewed suppuration to his having habitually a board on his knee, over which he used a heavy flat-iron, while working at his trade as a tailor.

There existed a profuse, offensive discharge from a fistulous opening near the external edge of the right patella, just above the condyle, at the bottom of which necrotic bone could be felt. The whole limb now presents an extreme deformity. There is bony ankylosis of the knee-joint at an angle of about 140 degrees. The femur is about eight inches shorter than that of the other side, and there is a distinct angular bend at a point between the middle and lower third of the femur.

Just about a year ago I performed necrotomy, by making an H-shaped incision, forming flaps, which included the periosteum, and removing the patella and the anterior portion of the lower third of the bone, so that, after the removal of the numerous sequestra which you see here, a shallow bone-cavity was formed, into which the soft parts were depressed and fixed by strong straight needles. The healing process took place very rapidly, so that after about four or five weeks the patient went home with a few granulating, superficial wounds, which finally healed under an ointment-dressing. About three months later a fistula formed again, and in September of last year I had to make a thorough revision and to scrape out and dissect away some carious bone at the bottom of the former cavity. At present everything seems perfectly solid and cicatrized, and the patient uses his leg, as well as his high heel (for equalizing the shortening) allows him.

The case is very interesting in some respects. When a boy of ten, the patient doubtless had a severe acute osteomyelitis with spontaneous fracture of the thigh, but no necrosis of any great extent could have existed. Otherwise the suppuration would not have ceased for fully nine years. No doubt the pieces of dead bone, which were found at the operation a year ago, belong to a process of secondary necrosis. They also present a character quite different from that of the usual sequestrum. They look like dead cancellous tissue, and were found in a portion of bone which normally has no bony substance in its centre. The whole lower third of the thigh-bone proved to be filled with a new formation of bone that had undergone partial necrosis, apparently in a very chronic manner. The primary acute ostitic process did not immediately result in necrosis, though it must have been very severe, to judge from the spontaneous fracture of the bone, but it led to diffuse ossifying ostitis. Probably some of the infectious material remained encysted, until subsequently, in consequence of some noxious influence, it must have been all free, and by its injurious action upon the newly formed central osteophytic substance, caused necrosis of the same.

This secondary necrosis, or breaking down of newly formed substance, especially in the lower third of the femur, is not uncommon. About three years ago he presented before this Society three cases belonging to this group. In all of them extensive cavities in the lower part of the femur existed, and plastic operations, similar to that just described, proved to be effective. If let alone, these bone cavities in persons of somewhat advanced years will not heal. The cavity must be obliterated by a plastic inversion of the soft parts, which, in cases like these, where bony ankylosis of the knee-joint exists, are best taken from the anterior aspect of the thigh, the patella being removed. These operations must, of course, be done aseptically, if union of the flaps by first intention is to be expected, and it is by no means easy to do the operation with such thoroughness that a perfectly aseptic wound is left. The sharp spoon, chisel, and disinfecting fluids must be carefully used in all the remote corners and granulating recesses, which, if left untouched, will, of course, become the seat of suppuration.

He regards this method of dealing with bone cavities as a decided advance in modern surgery, and he cannot sufficiently recommend it, also, for certain cases of necrotomy in younger persons, where large cavities remain after the operation. There happens, though exceptionally, a certain kind of necrosis, so-called "necrosis disseminata," in which numerous sequestra are scattered all through the bone, lodged in small shallow lacunæ, which are generally connected with each other by narrow canals filled with granulations. [A number of illustrative specimens were here presented.] It requires, not infrequently, great care to trace these canals, and, after thorough removal of all the dead pieces of bone, eventually a thin involucrum may remain. He has, with very satisfactory results, tried to obliterate such cavities by inversion of the soft parts, and has done so on the thigh, on the tibia, and on the radius. On the thigh he has made use of the soft parts on the inner aspect; on the tibia he has formed flaps corresponding to the inner side of the bone. Into cavities at the head of the tibia he has, after the proposition of Neuber, to whom we owe this recent method, inserted tongue-like flaps, having their bases in the region of the tuberosity. Where very thick muscles must be cut across, as in the thigh, he takes care to tie all visible vessels when cutting down to the bone, nor does he trust to the effect of the compressing dressing before removing the constricting bandage. On the contrary, he removes the latter in these cases before applying the dressing.

Sometimes, while the limb is elevated, digital compression of the main artery is kept up, so that only a small quantity of blood is allowed to pass into the distal

portion at intervals. All vessels of any importance are ligated, and then, after inverting and fixing the flap, a compressing antiseptic dressing is applied. He usually changes the dressing on the second day, especially in summer, The second dressing may remain for one or more weeks, when, as a rule, union of the flaps will practically be obtained, and the open spaces left will show healthy granulating surfaces.

One more word about secondary necrosis in cases of osteomyelitis. There exists one variety of this affection which he might call secondary metastatic necrosis. For example, a boy had extensive necrosis of one tibia involving the ankle-joint. He underwent necrotomy; altogether eighteen sequestra, including two from the lower epiphyses, were removed. The healing process went on somewhat slowly, and the boy, though gaining in flesh, showed a pale, almost chlorotic appearance. He walked for several weeks on crutches, as he had done before the operation, when a subacute affection of his right humerus, at about its upper third, occurred, and after incision of an abscess, which contained very little pus, bare bone was felt. A sequestrum was removed, and the wound gradually healed. About one month later he developed the same trouble in the other os humeri at almost exactly the same point; and here, also, a central sequestrum was found. In another boy, who in the acute stage developed an osteomyelitis of the ilium, at the end of the first year (apparently from the constant use of canes) inflammation of the lower epiphyses of both radii and exfoliation of small sequestra took place. It will be recalled that he presented to the Society about two years ago a boy who had severe acute osteomyelitis in the hip-joint, with necrosis of the head of the femur, and spontaneous epiphyseolysis; about one year after the first attack, when suppuration was still present, after he had been using crutches for a good while, he developed a central bone-abscess in the lower part of the radius, just above the epiphysis, and in the course of that year the same condition existed in the upper third of the humerus, which had been exposed to the pressure of the crutch, and in the diaphysis of the tibia where he had bruised himself.

He emphasized the fact that in none of these cases, during the acute stage, had these regions secondarily affected participated in the diseased process, though in some of the cases multiple acute osteomyelitis was present. He cannot explain this occurrence, except by assuming that a mechanical lesion at certain points in a subject still affected with the poison of osteomyelitis (whether that poison is *staphylococcus aureus*, or another parasite), will favor its deposit at these points, so as to develop there its characteristic lesion. None of these secondary metastatic affections were of a very acute type, but were either subacute or chronic, perhaps in consequence of the diminished susceptibility of the already inoculated constitution.

A last practical word. We often see, in our hospitals, undue force used in applying the constricting elastic bandage for bloodless operations. This is superfluous, and only increases the paralysis of the circulation. He showed here Nicaise's bandage, which, except for the thigh in muscular subjects, will answer every purpose. It is a good plan to try on one's own limbs how little elastic pressure is necessary in order to arrest the circulation. In patients who are under an anæsthetic this force is still less, and he would advise never to apply the bandage before the patient is fully under the influence of ether,

DR. BRIDDON asked if the patient's leg was as much flexed when he first came under Dr. Lange's observation as it is at present.

DR. LANGE replied that it was; the flexion was due to the spontaneous fracture which occurred during childhood as mentioned in the paper. He added that for thirty-five years the patient had walked with his leg in that position.

DR. LANGE then read a paper on

A NEW OPERATION FOR PROLAPSUS ANI.

(See page 206.)

DR. SANDS inferred that the operation described was designed for cases in which a considerable amount of prolapse existed. Several operations had been devised for the cure of ordinary cases of prolapse, among others that of stroking the mucous membrane longitudinally with the cautery. He had known this method to succeed, but he had also seen it fail. It is not safe to produce a very deep eschar, because the peritoneal cavity might be opened. When the prolapse is of moderate extent it can usually be cured by the ordinary operation for hemorrhoids—*i. e.*, seizing the mass with forceps, drawing it down, and ligating it; the contraction which follows will cure the prolapse. This simple procedure, he added, has been very successful in his hands, and he prefers it to more serious operations. However, in aggravated cases, Dr. Lange's operation will doubtless be of benefit.

DR. LANGE remarked that the operation which he had described is not dangerous if antiseptic precautions are observed. The operator should be careful not to pass his sutures into the lumen of the gut. In operating for cancer of the rectum it is not necessary to introduce the finger into the bowel. He had encircled the tumor with an elastic ligature; and then removed the growth; by stitching the gut to the skin before the ligature is removed, loss of blood was avoided.

The patient had been under observation since the operation, four months.

Dr. Lange, in reply to a question from Dr. Briddon, said that he removed the coccyx in order that the action of the levatores ani might be less impeded. In answer to a question from the same gentleman, he added that both the anterior surfaces and the posterior borders of these muscles were brought together, because, otherwise, the ring would not be sufficiently narrowed.

DR. ABBE thought that as none of the rectal tissue was removed, but the lumen was simply narrowed, it seemed as if there was nothing to prevent the gut from eventually distending until it reached its former size.

DR. LANGE called attention to the fact that there were several buried sutures of silkworm gut which might cause suppuration, and subsequent cicatricial contraction of the parts.

DR. ABBE suggested that the tendency to redistention might be obviated by overlapping instead of simply approximating the divided muscles; it would not impair their contractile power. They would not be so likely to slide apart, as they would to pull apart when merely brought in contact. He thought that four months was

too short a time in which to judge of the success of a plastic operation.

DR. LANGE admitted that the future must decide as to the usefulness of the new operation. He promised to observe his cases carefully and to report the results.

NEPHRECTOMY FOR PYONEPHROSIS.

DR. LANGE exhibited a kidney which he had removed in November, at the German Hospital, from a woman about forty years of age; nephrotomy had been performed several weeks before, a large quantity of extremely offensive pus being removed. The kidney at the time of the first operation was as large as a child's head. Some improvement took place after the nephrotomy, but a diffuse discharge of pus continued, hectic symptoms appeared, and the patient's health failed so much that it was decided to remove the diseased organ. The usual lumbar incision was made, and the distal ends of the eleventh and twelfth ribs were resected in order to gain more room, because at this last operation the speaker had found that the kidney extended high up under the diaphragm.

The operation was not entirely a smooth one; the peritoneum at the upper angle of the wound was torn, in spite of the fact that the retractors were covered with flat sponges. The rent was covered with iodoform gauze during the operation, and was subsequently closed with catgut sutures, so that peritonitis did not follow. Furthermore, through the carelessness of an assistant, who exerted undue traction on the elastic ligature, by means of which preliminary compression of the pedicle was effected, it slipped and a very copious hemorrhage from the large renal vessels occurred. This was controlled by suitable forceps, such as are used in ovariotomy for seizing the sac or pedicle, and several strong silk ligatures were applied. Recovery took place without any disturbance, the wound being left open and packed with iodoform gauze. An intercurrent bronchitis caused some rise of temperature for several weeks.

The urine still contained a little pus and vesical epithelium and some albumin; it was light in color, and there was some suspicion that the remaining kidney was not quite healthy. Still, the patient's condition had been materially improved, and, above all, her pain was relieved.

Dr. Lange remarked that this was the second case in which, from urgent indications, he had removed one kidney while the other was not sound. The other patient was very comfortable, being placed under favorable hygienic conditions in a mild European climate; still, he had occasional attacks of pyelitis. From his experience in these two cases, the speaker was inclined to conclude that when urgent symptoms were present, the extirpation of one kidney was not absolutely contraindicated by a diseased condition of the other.

RENAL CALCULUS REMOVED FROM A PYONEPHROTIC KIDNEY.

DR. LANGE showed a calculus, weighing only fifteen grains less than an ounce, which he had removed from a lady, fifty-three years of age, who suffered from pyonephrosis. The presence of the stone had not been suspected, and only a small portion of it could be felt when the pelvis was opened, the rest being firmly encysted, so that it was necessary to dig it out with the aid of an elevator, sharp spoon, and forceps. As in a similar case in which the speaker had operated, the calculus had a number of irregular projections, which were so firmly imbedded in the calices, that it was by no means easy to dislodge it As soon as the stone had been removed a fresh quantity of pus escaped, which had probably been shut in by the calculus. As the operation had been performed only five days before, it was impossible to say what would be the fate of the patient, although she was then in very good condition.

It was an interesting fact that in the previous history of the case there had been no symptoms pointing to renal calculus, and it was only three weeks before, after a fall, that she began to complain of pain in the affected side and general disturbance. The pyonephrotic tumor was then quite large and had probably existed for a long time previously as a hydronephrosis. A slight pain in the right lumbar region, which the patient had noticed during the past six years, must be attributed to disease of the corresponding kidney. The speaker had observed several cases in which renal calculi produced no pathognomonic symptoms; if the concretion was firmly imbedded in the calices, so as to remain stationary, neither hemorrhage nor great pain would be present.

VESICAL CALCULI AND HYPERTROPHIED MIDDLE LOBE OF THE PROSTATE REMOVED SIMULTANEOUSLY BY SUPRAPUBIC LITHOTOMY.

DR. LANGE also presented these specimens, which he had removed from a man upward of sixty years of age. The patient had suffered very severely for several years, and had been treated by the speaker himself about six years before, without obtaining much relief. Cystotomy had been proposed at that time, but this was declined. On opening the bladder, both calculi were found to be lodged in a deep diverticulum on the right side, near the entrance of the urethra. One of them was long and rounded, resembling one of the irregular processes of the renal calculus previously exhibited, so that it was possible that the stone might have descended from the kidney. Finding that the middle lobe of the prostate was considerably enlarged, he seized it with a vulsellum forceps, encircled it with a galvano-caustic snare, and removed it without much difficulty, the hemorrhage being slight. The wound in the bladder was kept open, in order to allow of effective local treatment. The patient's recovery was retarded by a very severe and protracted bronchitis. At the end of two months the wound was entirely healed, and he was then able to pass a full stream of urine, instead of being obliged to draw it with a catheter, as he had done for years. The urine was nearly normal. The patient's face had entirely lost that characteristic anxious, nervous expression so common in those suffering from painful chronic affections of the bladder.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, January 14, 1887.

THE PRESIDENT, JAMES C. CAMERON, M.D., IN THE CHAIR.

REMARKABLE BROMIDE ERUPTION.

DR. BLACKADER exhibited a girl, æt. fourteen, who was affected with a remarkable eruption on the legs.

This consisted of a number of large oval patches five or six inches long and two or three wide on the extensor and inner surfaces of the calves of the legs. The eruption resembled somewhat a tubercular syphilide; it was raised and covered with a thick scab. On lifting the scab a moist surface was exposed, red, raised, and looking like exuberant granulations. The eruption had come out in smaller patches some months before these had coalesced. The girl had been taking bromide for the last two and a half years in doses of from half to one drachm daily.

DR. STEWART said that it was well to combine the bromide with arsenic when they were given for any length of time.

WOUND OF THE INTERNAL JUGULAR VEIN.

DR. JAMES BELL exhibited a patient with the following history: A. B., æt. thirty, fell from a ladder with a chisel in his hand, and when striking the ground the chisel was driven deeply into his neck about one inch behind the angle of the lower jaw on the right side. Immediately there was a great gush of blood from the wound, which was arrested by a companion compressing the wound with a cloth. The hospital ambulance arrived, and on the way to the hospital the house surgeon, finding the bleeding again commencing, placed his finger in the wound. On arriving at the hospital Dr. Bell was sent for, and whilst examining the wound tremendous hemorrhage occurred; compression of the common carotid seemed to arrest the hemorrhage somewhat, so that vessel was ligated; but still the hemorrhage was as profuse as ever when the finger of the assistant was taken out of the wound. In order to find the bleeding point the wound was enlarged, but its depth was so great and the hemorrhage so tremendous, that a very inefficient search could be made. The blood seemed to be coming from a point near the base of the skull, which could be felt with the finger in the wound. It was now determined to plug the wound, which was done with three carbolized sponges well dusted with iodoform; these completely filled the wound. A firmly applied bandage was then put on over dry dressing. By this means the bleeding was completely arrested.

The man, who had lost considerable blood by this time, was very pale and had a small, flabby pulse; he was put into a warm bed with hot bottles, and stimulants were freely administered. Immediately after the accident the man was unable to speak and could not swallow. The first dressing was on the tenth day, when one of the sponges was removed; on the seventeenth day the second sponge was taken away, and the third sponge was not removed for a month. There was not the slightest suppuration throughout the case and the man recovered fairly well. He still had a hoarse voice and some difficulty of swallowing, and also contraction of the sterno-mastoid of the right side with a contracted pupil on the same side.

DR. BELL said that he did not think the ligature of the carotid did any good, and that probably the case was one of wound of the internal jugular vein near the point, where it came from the jugular foramen. He thought that there had been some injury to the right pneumogastric nerve, if not complete division, with, at the same time, wound of the sympathetic trunk of that side, as evidenced by the contracted pupil, and slight drooping of the upper eyelid.

DUPUYTREN'S CONTRACTION.

DR. R. J. B. HOWARD read a short paper on a case of Dupuytren's contraction of the little finger, in which he had operated according to the method of Mr. Adams, of London. The patient was a girl, aged twenty-two, who had always been healthy; no history of gout or rheumatism. The contraction was very marked. After dividing the bands subcutaneously at the two ends the lateral strands were then cut, and the finger was put in its natural position and held there with a splint and bandage. The wounds made by the tenotome healed well, but a slough formed in the dorsal surface of the little finger, and when this came away an ulcer remained, which was difficult to heal. He could not account for the presence of the slough, for the nerves supplying the skin of that part were not cut, and at no time was the pressure great. The result in consequence of the slough was not as perfect as it otherwise might have been, but a fairly straight and very useful finger was obtained. Dr. Howard also showed a beautiful dissection of a case of Dupuytren's contraction obtained from the anatomical rooms of McGill University.

PUERPERAL ECLAMPSIA.

DR. A. L. SMITH read a short paper on the above subject, and reported several cases. He strongly advocated the induction of premature labor at the seventh month in *all* cases of pregnancy where the amount of albumen was large and the urea deficient. In this way he thought eclampsia could be prevented, and fewer mothers and children would be sacrificed. Dr. Smith was of the opinion that the albuminuria of pregnancy was due entirely to pressure, and the proper treatment was to remove the cause.

DR. ARMSTRONG said he had seen many cases of albuminuria during pregnancy without convulsions occurring, and that when these came on it was time enough to induce premature labor.

DR. GURD stated that in some of the most severe cases of convulsions there was only a slight amount of albumen in the urine, whilst the patient might have a large amount of albumen and not have the slightest tendency to convulsions. He was altogether opposed to the induction of premature labor in cases of albuminuria. Dr. Gurd had found treatment of benefit. When there was albumen, with headache and œdema, he was in the habit of ordering the compound liquorice powder and cream of tartar, and also he put the patient on a milk diet.

DR. TRENHOLME thought that the condition of the circulatory system is most important in these cases. If the heart is diseased, the case is of much greater gravity.

DR. JAMES CAMERON disagreed entirely with Dr. Smith as to the necessity for inducing premature labor in albuminuria, and said that if this treatment were advised very serious results might follow.

CONGENITAL RETRO-PERITONEAL CYST.

DR. WILLIAM GARDNER showed some fluid removed from a retro-peritoneal cyst of the left loin. The patient, a female, æt. twenty-eight, unmarried, had an enlarge-

ment of the abdomen since childhood. In recent years the swelling had been growing larger, and she had been suspected of being pregnant. A week before she was seen by Dr. Gardner, she suddenly took ill with rigors, high fever, perspirations, vomiting, and severe pain and tenderness in the left loin. On examination a rounded, smooth tumor was found to occupy the left loin, enlarging the abdomen considerably on that side and extending beyond the median line to the left; it reached upward as high as the ribs and down to the brim of the pelvis. As the symptoms were urgent, it was decided to explore by abdominal section. A two inch incision was made in the median line below the umbilicus; on opening the cavity the cyst was found to be behind the peritoneum and intestines, the colon lay in front and in such a position as to render the management of the case too difficult; so the median incision was closed, and another made over the most prominent part of the tumor, about three inches to the left of the umbilicus. On reaching the tumor it was tapped, and seventy ounces of a dark, brown, turbid fluid, containing numerous crystals of cholesterine, removed. The opening was enlarged and its edges stitched to the edges of the abdominal wound, and a glass drainage tube left in. From the time of the operation the girl ceased to have pain, fever, or any other bad symptom; the discharge was slight and the cavity shrank rapidly, and when the patient was discharged, twenty-six days after the operation, the cavity was almost closed.

On examination the evacuated fluid was found to contain a quantity of pus. Dr. Gardner remarked that the cyst was evidently an old one, possibly congenital, growing near the kidney, and which had suddenly taken on inflammatory action. He also said that the cyst could have been evacuated through the loin posteriorly, but that he felt more at home in opening the abdominal cavity than the loin, and the result seemed to justify the course pursued.

CYSTO-SARCOMATOUS TUMOR OF OVARIES AND UTERUS.

DR. GARDNER exhibited a sarcomatous tumor of uterus and ovaries, removed from a married woman, æt. twenty-one, the mother of a child one and a half years old. The tumor was first noticed in October of last year and had grown rapidly, causing pain, emaciation, and interference with the functions of both bladder and bowels. The whole vaginal roof was a hard mass, and the os only made out with great difficulty. The whole floor of the pelvis was merged into one mass, and the operation was completed by encircling the cervix with Koeberle's clamp, and afterward amputating it and securing it with pins externally at the lower angle of the wound. The hemorrhage was free. The cavity was well washed out with warm water and drained. Everything went well until the sixth day, when the temperature rose and continued high with fluctuations for six days. She was now (19th day) quite convalescent. The wire was cut and the clamp removed on the third day.

NEWS ITEMS.

PARIS.

(*From our Special Correspondent.*)

TERPINE IN CASES OF NEURALGIA.—DR. DUCROUX, in a paper recently read before the Société Médico-pratique, communicated notes of cases showing the good effects of terpine in cases of neuralgia.

The first case was that of a woman forty-seven years of age. Two years ago she was attacked with neuralgia consequent on occupying a damp house. A treatment of sulphate of quinine procured relief, but this was only temporary. Aconitine was subsequently administered, but the relief obtained was likewise temporary. On February 15, 1886, she was suffering from constant neuralgia on the right side of the lower jaw, in the right cheek and temple. There was also pain in the supraorbital notch, the mental foramen, and in the occiput. The patient complained of a constant sensation of heaviness in the head, and of cold in the right side of the head. 0.60 centigramme of terpine, in the form of three pills, was administered between meals during three days. On February 19th considerable relief was obtained. The pains and the sensation of cold disappeared, that of heaviness of the head, which had persisted for two years, also disappeared; the pains returned in a few days, terpine was again administered in the same manner as on February 25th. The pains disappeared, then returned, but in a milder form, without any heaviness of the head. Terpine was again administered on March 8th. Neuralgia again appeared; doses of 0.80 centigramme, in the form of four pills, were administered on March 10th, for three days. During the month of April these doses were repeated at intervals. At the end of April the occiput was sensitive, but all other pains had ceased. At the beginning of May and June terpine was again administered, the pains having reappeared. On June 15th the patient was able to go out without extra covering on the head. Dr. Ducroux is of opinion that the patient may be again obliged to have recourse to terpine, as the neuralgia reappears, though in a milder form each time. The therapeutic action of the terpine appears to fail after a few days. In cases of obstinate neuralgia it might be advisable to administer terpine every week during three years.

The second case was that of a married woman, thirty-five years old. At the age of twenty-two she had intermittent fever. From the age of thirteen or fourteen she had suffered from headache, from time to time. Menstruation ceased six years ago. A week ago she was attacked with pain in the right side of the head, differing from her habitual headache. This pain, which gradually increased, extended in front around the ear and over the temple and cheek, and behind over the mastoid region. There was pain in the external auditory channels. The pains were accompanied by a humming in the ears; 0.60 centigramme of terpine was administered in three pills, to be taken between meals. On April 29th the pains had disappeared, but the humming in the ears continued. 0.50 centigramme of sulphate of quinine was administered during three days. This remained without effect. A few days previous to May 17th the humming in the ears diminished, and took a different form. The sound in the ears was no longer that of humming, but of running water. The patient could neither hear herself nor others speak. 0.60 centigramme of terpine was administered during three days. The sounds in the ear diminished, and completely disappeared two or three days after the last pill was administered. Dr. Ducroux believes that the

disappearance of the pains was due to the use of terpine, and that the terpine exercised a certain influence upon the sounds in the ear.

The third case was that of a man, twenty-three years old. Fifteen years ago he was attacked with bronchitis, accompanied by hæmoptysis. In May, 1885, he was attacked with severe pain above the right eye, in the supraorbital notch and the occiput. The treatment administered was as follows: A blister applied to the temple and dressed with 1 centigramme of morphine; 0.60 centigramme of terpine in three pills, administered during three days. The first morphine dressing did not cause the pain to diminish; but the second, applied the following evening, caused a diminution of pain. The patient had then taken three terpine pills. As the improvement continued, only eight pills were administered in three days, after the second day. The neuralgia was completely cured. Dr. Ducroux attributes this cure to terpine, as the morphine dressing remained without effect.

PROFESSOR RANVIER.—This distinguished histologist and pathologist has been elected a member of the French Academy of Sciences.

SUITS FOR DAMAGES FOR DEFECTIVE DRAINAGE.—A series of suits for damages was recently decided in the fourth session of the Superior Civil Court, Boston, before Judge Pitman. The cases are of great interest to physicians, as well as to landlords and tenants. The suits were brought to recover damages for sickness and costs of medical attendance, caused by alleged defective drainage. The plaintiff, Charles A. Cutter, leased a house of the defendant at No. 60 Allen Street, Boston, with the representation that the drainage was in good condition. Mr. Cutter set forth that, owing to the bad drainage, he and other members of his family had diphtheria, one child dying thereby. The defendant denied his liability, and, in defence, claimed that the drainage was good. The suits were in the names of five members of the Cutter family, and ended in substantial verdicts for the plaintiffs, the amounts being, respectively, $1600, $700, $300, and $250, each, in the last two cases, making a total verdict of $3100.—*Boston Medical and Surgical Journal*, February 10, 1887.

A PRIZE FOR THE APPLICATION OF ELECTRICITY.—A prize of fifty thousand francs is offered by the French Minister of Education for a discovery rendering electricity economically applicable in the shape of heat, light, chemical action, mechanical power, transmission of messages, or treatment of disease. A committee, with M. Bertrand, of the Academy of Science, as its chairman, will adjudicate.

PROFESSORSHIP OF HYGIENE IN BRESLAU.—A Professorship of Hygiene has recently been created at Breslau, to which Professor Flügge, of Göttingen, has been appointed, where he is Director of the Institute of Chemistry and Hygiene.

A NEW MEDICAL PERIODICAL.—A new medical periodical will appear on March 1st. It will be devoted to children's diseases and allied subjects, and will be called the *Centralblatt für Kinderheilkunde*. It will be published in Vienna, and edited by Dr. R. W. Raudnitz. The English editor is Dr. H. Ashby, of Manchester, to whom all papers for abstraction may be sent.

HOW LONG SHOULD A NERVOUS PATIENT BE TREATED?—The question of how long treatment should be continued in a neurotic case when no evident benefit is produced, has recently been raised in a Hamburg law court. A medical man, having as a patient a merchant suffering from "nervousness," treated him by galvanism. Altogether he galvanized him 445 times, but the nervousness did not disappear. Then came the matter of fees. The sum claimed was £111 5*s*. The merchant disputed this on the ground that the treatment ought not to have been continued so long, as it was not producing any benefit. The court referred the matter to the medical board, which gave as its opinion that the doctor ought to have asked the patient, after some fifty sittings, whether he would like to continue them, as it was doubtful whether the treatment was doing any good. The court, however declined to accept this view, holding that it was for the patient to say when he had tried the treatment as long as he was disposed to pay for, and so gave judgment for the full amount claimed.

THE NUMBER OF MEDICAL INSTRUCTORS AND STUDENTS IN GERMANY.—The Medical Faculty of Germany numbers 581 members, who are located as follows: In Berlin, 103; Leipzig and Munich, each 44; Breslau, 38; Bonn and Strasbourg, 30, and the remainder in smaller cities and towns. Vienna numbers a larger Faculty than Berlin, 122 instructors; it also excels the Prussian capital in its number of students, which, during the summer term of 1886, was 2289, that of Berlin being 1142. The proportionate number of students to each instructor is 11 in Berlin, and 18.5 in Vienna. The entire number of medical students in Germany during the summer term of 1885 was 8261, 14.2 students to each instructor. Berlin numbered 1142 of these; Munich, 1123; Würzburg, 796; Leipzig, 679; Freiberg, 544—*Deutsche Wochenschrift*, January 6, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 8 TO FEBRUARY 14, 1887.

MCCREERY, GEORGE, *Captain and Assistant Surgeon.*—Granted leave of absence for one month, with permission to apply for one month's extension.—*S. O. 35, A. G. O.*, February 11, 1887.

MORRIS, EDWARD R., *First Lieutenant and Assistant Surgeon.*—Leave of absence extended twenty days.—*S. O. 35, A. G. O.*, February 11, 1887.

HARRIS, H. S. T., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort Clark, Texas, to Fort Ringgold, Texas.—*S. O. 16, Department of Texas*, January 31, 1887.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

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